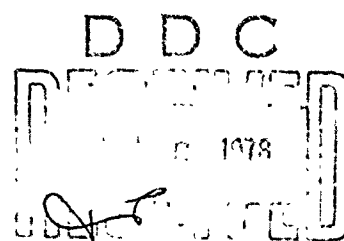


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THE ARMY STUDY SYSTEM

A Staff Study by
The Director of
Special Studies
Office of the
Chief of Staff,
U.S. Army
May 1964



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**"Quis coordinabit ipsos
coordinatores?"
or, in the vernacular,
"Who coordinates
the coordinators?"**

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ABSTRACT

Study examines current Army major study activities and evaluates effectiveness of studies as inputs to planning, programming, budgeting, and other needs. Areas where improvement is feasible and desirable are identified. A combined organizational and procedural approach is proposed to provide improved basis for development of comprehensive and timely study effort, a master study program and improved use of studies. This coordinating structure includes an Army Study Advisory Committee (ASAC); the Director of Special Studies, OCS, as Chairman, ASAC, and focal point for study coordination; "Study Coordinators" in each Army Staff agency; an Information Center for major Studies; and periodic bibliographic catalogs.

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SUMMARY

SUMMARY

THE PROBLEM

1. The memorandum (Annex A) signed by the Vice Chief of Staff which directed this study included instructions to examine the Army's current arrangements for the conduct of in-house and contractual studies to develop new policies and procedures which should insure adequate control and use of the Army study effort.

2. The directive goes on to say that this study should be the basis for the establishment of a system for:

- a. Evaluating requirements for new studies and recommending the agencies which should initiate them.
- b. Establishing appropriate priorities among studies.
- c. Effecting the substantive review of studies by qualified agencies.
- d. Reporting and disseminating information on all studies.
- e. Integrating the study effort in the planning-programming-budget cycle.

3. Finally the directive states that the proposed study system should neither unduly centralize authority at the Department of the Army nor infringe upon commanders' responsibilities and authorities.

ASSUMPTIONS AND DEFINITIONS

4. The improved study system herein described is intended to include only Army study efforts of major importance affecting the readiness and capabilities of the Army and of interest to Headquarters Department of the Army. It excludes detailed consideration of studies not having significant impact on policy, strategy and doctrine or on the overall development and use of Army resources, such as studies which concern matters strictly internal to field commands and staff agencies, studies dealing with technical and mechanical matters, specific research, administrative procedures and techniques, or the simple collection of information. It will be obvious that the above

definition is far from being precise. However to attempt more precision at this time could lead to undesirable administrative inflexibility. If more exact definitions are needed in the future, they should be worked out within the system.

5. The term "special study" as used herein is defined as:

"A formal study, recorded in document form, which is conducted by an ad hoc or permanent study organization which may be an in-house agency, a contractor or any combination of in-house and contract effort. A special study requires more comprehensive assembly of facts and more complex analysis than can normally be accomplished by staff officers in a "staff study" and also is broader in the scope and factors considered than most technical, procedural and engineering studies. The emphasis is on the analysis and synthesis of a variety of factors, leading to conclusions which can make substantive contributions to planning, programming and decision-making."

FACTS BEARING ON THE PROBLEM

6. The need for the directive initiating this report and for substantive improvements within the Army study system has been fully corroborated by the analysis in depth conducted under this study. The increased importance of studies to assist the decision-maker at all levels within the Department of Defense and the Services is well recognized if not yet universally understood within the Army Staff. This importance is underlined by the personal attention given by the Secretary of Defense to the substance of the studies in his formalized, calendar year selected Project List.

7. Using modern techniques, special studies are a highly useful though not an exclusive procedure for the orderly, logical and comprehensive analysis of many complex factors affecting the development of strategies and policies and of optimized and balanced concepts, doctrine, materiel and organizations within the Armed Services. Thus they can and should be important inputs in the development of plans and programs as well as being useful in numerous other derivative areas as aids to decision-making. There has been a marked increase in the number of special studies being conducted within the Army, both in terms of self-initiated studies and those directed by higher authorities. This basic trend will undoubtedly continue in the future. Army personnel

programs in education, training and assignments do not yet adequately recognize this trend. The Army has done less in educating personnel on the techniques of making and using studies than either the Navy or the Air Force.

8. The current Army study effort is reasonably effective today, although it unquestionably can and should be improved and made more responsive to requirements. The most basic fault in much of the Army study effort in the past resulted from an imbalance in emphasis wherein less effort was put on the logical formulation of basic balanced objectives deriving from examination of the comprehensive future world environment and far more attention was paid to developmental analysis based on overly generalized objectives. Improvements in the Army study system can be achieved by some orientation in emphasis of the study program, better coordination and information exchange and minor organizational changes, all of which, hopefully, leading to eventual decreases in the currently diffused and compartmentalized demands on staff manpower and study resources.

9. The major reorganization of the Headquarters, Department of the Army in 1962 and the application of new DOD and Army concepts for planning, programming and budgeting are logical, effective and recognize the essentiality of studies as part of staff work, planning, programming and decision-making. One difficulty in the situation, however, is that the final shakedown of the Army's new organization and procedures into smoother effectiveness is being delayed and fragmented to some extent by a far greater load of necessary but unanticipated directed studies than was planned for. In FY 1963 the total costs of Army special studies approximated \$30 million. About seven hundred full-time professional personnel were employed in staffing the Army's important in-house study agencies.

10. A trend is growing to conduct increased numbers of major studies by large ad hoc study groups drawn in substantial part from the Army Staff. This tends to fragment staff work, increase the load on the remaining staff, and lessen the thoroughness of the essential higher level review and integration of study conclusions. Further growth in this trend can affect adversely the timeliness and responsiveness of the overall programmed study effort. A number of other factors bearing on these effects are set forth in the main body of this report.

11. To be fully responsive and timely, studies covering future time frames, particularly those in the strategic, doctrinal or force development fields, need to be placed in a realistic context which recognizes two of the basic phenomena of our time:

a. The first of these is the dynamic change in the world situation from the bi-polarity of the post World War II years to one of increasingly polycentric power, with a consequent diversification of the spectrum of political problems and potential conflicts within which the Army as a part of our Armed Forces must be effective in support of national security policy. These considerations are generally, but not necessarily comprehensively or comparably, addressed in our longer range planning and study effort through the use among others of such basic inputs as the Army's long-range strategic forecasts, technological forecasts, and considerable intelligence data.

b. The second is the importance to military power of the tremendous advances taking place in science and technology. In some fields weaponry has jumped from primarily tactical significance to direct strategic significance. Costs and complexity have also made quantum jumps. Thus weaponry has become of increasingly direct concern to the highest levels of government. Furthermore, to exploit the burgeoning technological advance requires not only the best fusion of scientific and military thought, but also the use of modern study techniques to cover future needs early enough to help overcome the inevitable time lag from research and development to production.

12. In essence the basic problem of the Army in planning and otherwise preparing itself best to meet the future can most clearly be expressed in a paradox. The paradox is that in the next decade or so the United States is less likely to have to fight major nuclear or non-nuclear war against the USSR or Red China than to apply its power in limited or sub-limited conflicts, but this will remain true if, and only if, its armed forces, including the Army, continue to be kept strong enough and modern enough to make it unwise for the USSR or Red China to opt for direct conflict. If our deterrent posture towards major war remains effective the more likely active engagements of the Army will be in the lesser end of the spectrum of conflict. From this paradox derives the more specific problem, not yet fully mastered, which is how best to evaluate and balance the specific components of the vitally important deterrent requirement against the more likely pragmatic requirements and determine, where they differ, the best mix to do both.

Better integrated projections of intelligence in more useable forms and even greater efforts to marry scientific and technical thought with military professionalism offer promise as improved bases in the study effort to help make this evaluation and determination.

13. There are a number of discernable areas for improvement in the current Army study system. Among these is the noteworthy lack today of a facility for the collection, cataloging, collation and dissemination of major Army and other studies. In consequence, it is difficult for current study to benefit fully from past endeavors and continuity of thought suffers. The systems used within the Army Staff agencies and major commands themselves for maintaining current information on, monitoring, and fully utilizing studies, including those previously conducted by the agency concerned, have no common basis and vary in effectiveness from negligible to good. There is need for a more formal and comprehensive methodology for analysing potential future requirements to avoid gaps and determine the need to initiate new major studies, for coordinating and reviewing priorities within the study effort, and for insuring better comparability in the review and integration of study conclusions into the "real-life" context of planning, programming and decision-making. This is not to imply that such functions are not being performed at the present, but because of the lack of more standardized methods there frequently results an imbalance, uneven emphasis, unresponsiveness or disjointedness in the utilization of study conclusions.

14. There appears to be a real need within the Army Staff of a focal point for liaison with the Army Secretariat, the Office of the Secretary of Defense and other superior agencies to insure correlation and full understanding of the objectives of studies directed by them. Common policies for working with these agencies as a study progresses would help assure that the results will be properly responsive, valid, and timely. In the area of study techniques themselves, there are not clearly established common procedures to be followed in the initiation, conduct of final review and use of any specific major study -- procedures, for example, requiring careful analysis of and initial statement of the problem and assumptions, bibliographical research to determine what previous studies and other material bear on the problem, and carefully considered decisions as to what type of study will best meet the objectives of the study in an adequate and timely way.

DISCUSSION

15. A special study is one procedure among many for organized and logical thinking about a problem. As such it should not be considered separable distinct from the other thought processes involved in staff work, planning and decision-making. To centralize authority over the initiation or conduct of studies would not only infringe upon the responsibilities and authorities of key staff agency chiefs and major commanders, but might well inhibit one of the most valuable aspects of the study -- the opportunity to apply free and imaginative thinking to the objective analysis of complex problems. However, so long as resources for study-making remain tight, some mechanism for the informed allocation of these resources is required.

16. It is important to consider the study, even though it be performed by a separate group, as an integral part of staff work. In many cases a properly conducted, well integrated study can greatly simplify much complicated staff work. This consideration applies with particular emphasis to the Army because of the complexity involved in planning the optimum organizations, equipment and training to fit the individual soldier -- the man -- into efficient ground force units which may face a wide variety of missions. Recognition of the importance in staff work of integrated studies should allay some fears that studies are crowding out "regular" staff work. However, the same consideration highlights the importance of a flexible, decentralized and responsive study "system".

17. The Army has fallen behind in the recognition of and action on the importance of the education and training of its military and professional civilian personnel in operations research and other modern study techniques and in the use of such techniques. General orientation education is needed almost across the board for the officer corps as a whole. Additionally the essentiality of an adequate professional in-house hard core of expertise in scientific study techniques has not received sufficient attention. The Army is lagging behind the Navy and Air Force in providing graduate education and advanced training in this field.

18. Because of the impact on Army Staff operations of "crash" or directed studies, most frequently required because regular staff procedures or the study program failed in the past to identify and act on important problem areas, any improved Army study system must be designed to include and be more responsive to the directed study.

However, it should also aim over the long run at lessening the necessary requirements for directed studies by reducing gaps in the Army's regular study program and by winning the confidence of higher authorities that the Army's system is both comprehensive and technically excellent.

12. There are three minor organizational problems within the current decentralized study systems that deserve specific attention. These are:

a. The broad problem of coordinating requirements for "operations research" studies and allocating funds and resources for these studies was addressed by a CRD summary sheet, dated 23 October 1963. The CRD paper is a thoughtful analysis of problems in the operations research field. Similar problems have been analyzed in this study of the overall Army study effort, and are discussed in the main report. The conclusions stated below apply much of the CRD thinking to both the operations research as well as the wider area.

b. At the present all major Army Staff agencies can levy directly on the Combat Development Command for studies. The CDC is currently far short of personnel and other resources to do everything for everybody. The Assistant Chief of Staff for Force Development has initiated a summary sheet on this problem, pointing out how imperfect are current procedures for coordination and priority evaluation in this area. The problem has also been examined in this analysis, is discussed in the main report, and addressed in the conclusions below.

c. The specific part to be played by the Army Institute of Advanced Studies in an improved Army study system is important to the provision of a better long-range basis for the system. From the point of view of the Army study system, it appears desirable to place the AIAS directly under the Deputy Chief of Staff for Military Operations so that it may be used in a more basic way to help in realistic long-range analyses to be used as inputs throughout the study system. However, this relationship is part of a far broader problem and it can only be decided upon after an examination which is beyond the scope of this study.

20. In summary, the Army's current study effort is extensive, highly useful and improving. Radical change does not seem called for, but, rather, time phased and evolutionary improvement, to give better

timeliness, comprehensiveness and responsiveness to the study effort. A major improvement can be made by setting up a flexible, generally decentralized mechanism for the orderly initiation, coordination and review of studies, by better liaison within and without the Army Staff, and by insuring the full and free flow of information on study effort between and among the staff agencies. The body of the main report which follows this Summary develops in reasonable detail the specifics of such a mechanism and methodology. The implementation of these specifics together with certain standardized procedures are believed to be the best balanced approach at this time to achieve an improved study system within the Army's current concepts of organization and staff procedures. It should yield substantial benefits with minimum disruption to a going concern.

CONCLUSIONS

21. It is concluded that worthwhile and feasible improvements can and should be made in the Army study system and that these improvements can be made within the current organizational structure of the Army while continuing desirable decentralization in authority, responsibilities and activities.

22. An "Army Study Advisory Committee" (ASAC) should be established. The ASAC would be composed of representatives of the Office of the Chief of Staff, each major Staff agency, each major command and the Special Assistant for Operations Research, Office of the Assistant Secretary of the Army (Financial Management). Military members should preferably be of general officer rank. This Committee would have no directive authority but would be advisory to the Chief and Vice Chief of Staff and, when requested, to a Staff Agency Chief. The Committee, a broadening of the current Army Operations Research Steering Committee (AORSC), would meet as required. Annually it would consolidate and arrange in priority the master Army program of major studies, developing this from sub-programs developed by the major Staff agencies. During the balance of the year it would provide a flexible mechanism to be used as necessary by the Vice Chief of Staff to monitor and coordinate the study system, fit major new directed or Army-initiated studies into it, and recommend on priorities or on requirements for major studies needed to fill gaps in the master program. It would coordinate with the Director of Army Programs, OCS, to assure adequate study effort in support of major Army Program Charge Proposals. It would review the funding requirements as

necessary. The ASAC would perform these functions only to the extent regular staff procedures are unable to cope with them or are unduly cumbersome and time consuming. The ASAC would continue to discharge for the Chief of Research and Development the functions currently undertaken by the AORSC in regard to Operations Research. The ASAC would also be used to develop and coordinate general recommendations bearing on the study system, such as needed improvements in the Army's education and training of personnel in study techniques. On occasion the alternate members of the ASAC (see paragraph 23 below) would be called together as a working sub-committee on matters not requiring the attention of the formal ASAC. Procedures for funding and administering special studies would otherwise remain unchanged.

23. There should be designated in each major Staff agency and major command one officer to be the "Study Coordinator" of that agency or command. He would be the principal staff advisor to the head of his agency on general study matters, be the focal point for current information on the status of the study effort within his agency, act as his agency's alternate on the Study Advisory Committee and act as liaison between his agency and other Study Coordinators. The rank, position, organizational support and scope of other duties of the Study Coordinator would be as established by the agency chief or commander concerned. The Study Coordinator would not at least initially be expected to involve himself in the substantive conduct of specific studies by his agency, although he should become increasingly useful in an advisory capacity to action officers so involved. However, because he will be the agency head's or commander's principal advisor on study techniques, be a part of a "technical channel" for the exchange of information on studies, and act as an alternate member of the ASAC, he should so far as feasible be educated and experienced in operations research and allied study techniques and their applications.

24. Changes should be made in the detailed functions of the Director of Special Studies, Office of the Chief of Staff, set forth in the terms of reference governing his position, so that he would act as the Chairman of the ASAC, would be a focal point for general liaison on studies with the Army Secretariat, the Office of the Secretary of Defense and other outside agencies -- primarily to facilitate direct liaison between an outside agency directing a specific study and the Army agency sponsoring or conducting it -- and would act as the principal assistant of the Chief of Staff and Vice Chief of Staff on matters related to the overall Army study system. He should be a member, but not Chairman, of the steering groups of all major special studies. After

the new study system is well under way the functions of the Director of Special Studies might well be reabsorbed within the Directorate of Coordination and Analysis, Office of the Chief of Staff.

25. An "Army Studies Documentation and Information Retrieval System" (ASDIRS) should be established along the lines recommended in Annex C of this study. This much needed facility should be initiated speedily on a fairly austere basis with a capability for growth if later indicated.

26. The requirement should be placed upon the Assistant Chief of Staff for Intelligence, drawing on the Defense Intelligence Agency for basic data and in collaboration with other interested staff agencies, to develop, staff and issue by 1 January 1965 (with annual updating thereafter) the following documents:

a. A "Forecast of Conflict Environment" aimed about ten to twelve years in the future and covering, by continents, emerging power centers; probable or alternative political objectives and orientations of major nations or groups of nations and trends in their economic and military power; and further information to include geographical and demographical factors, scientific and technological potentials, and sociological or ideological trends or developments. Intercontinental power groups would also be treated. More detailed information on the contents of this document are in Section 9 of the main report.

b. A battery of carefully selected scenarios setting forth a spectrum, from total war through counterinsurgency and anti-subversion operations, of eight or ten hypothesized conflict situations in which the US would be assumed to be involved in the time frame of six to eight years in the future. These "Rainbow Scenarios" would place their situations on actual terrain, involve actual nations and groupings of nations and would develop so far as feasible for each scenario the principal factors now considered as the basis for specific contingency planning in the current time frame. A more detailed description of the contents of a typical scenario is included in Section 9 of the main report. Each scenario would hypothesize the political objectives of both sides and delineate both quantitatively and qualitatively the presumed friendly and hostile forces. If the full battery of scenarios can not be produced by 1 January 1965, then three or four of the most representative should be.

27. The "Forecast of Conflict Environment" and the "Rainbow Scenarios" should be considered in all applicable Army studies as a common background of inputs, on a comprehensive or selective basis depending on the subject, to provide a common background for developmental studies or, in effect, common "Measuring Sticks" to be generally applicable in the development, review and integration of studies. It would be helpful if these documents were issued as annexes respectively to the Basic Army Strategic Estimate and the Army Strategic Plan.

28. Current instructions should be changed and expanded to establish the principles of a standard operating procedure for the initiation and conduct of major special studies. The salient principles would be:

a. Before a study is undertaken, the sponsoring agency (defined as either the initiating agency or, in the case of a directed study, the agency assigned overall responsibility for supervising the conduct of the study) would clarify and carefully draft, staff and fully coordinate the scope, "statement of the problem" and the governing basic assumptions, informing and using the Study Coordinators to the extent desired.

b. While clarifying and coordinating the statement and scope of the problem to be studied, the sponsoring agency would undertake simple bibliographic research of previously conducted studies and other material to determine if a staff study will meet the problem or, if a special study effort is required, what specific special study techniques and organization should be employed.

c. In the case of a directed study the sponsoring agency will immediately establish close liaison with the initiator of the request to exchange ideas and otherwise insure so far as feasible that the resultant study will be responsive and valid in the eyes of the initiators. Close liaison will be continued throughout the conduct of the study.

d. Having defined the proposed study and study procedure, the sponsoring agency would, in the case of major studies involving appreciable competition for scarce study resources, refer the proposal to the Army Study Advisory Committee for formal or, more normally, informal coordination and confirmation of a priority for the study and of how and by whom it would be conducted.

e. The sponsoring agency, after the study is underway, would maintain full and continuous contact with the group, agency or contractor conducting the study to insure that the studies are provided the continuing orientation, guidance, staff inputs and exchange of ideas necessary to maximize the ultimate responsiveness of the study to the initiator's requirements, being careful at the same time not to inhibit or effect the objectivity, freedom or integrity of the study. Current practices for the use of steering or working advisory groups for this purpose would be continued or expanded upon.

f. The sponsoring agency would be clearly charged with responsibility for insuring proper high level substantive review and integration of the conclusions of the study, and for developing, staffing and recommending specific actions resulting from the review of the study and for following up on the implementation of the approved recommendations. Upon request of the initiating agency, or if so directed by the Chief of Staff or Vice Chief of Staff, the ASAC could be used to assist in the review and integration process.

g. A common format should be established for major study reports to cover: (1) bibliographic and indexing requirements to include a standard type abstract and (2) a standard format for a "summary" which would be part of each report.

h. Special studies prepared by ad hoc or outside study groups should always develop conclusions, findings or alternative solutions but should be asked for or develop recommendations only in those cases wherein the study scope includes all elements relevant to the recommendations. It should be the responsibility of the sponsoring agency, from the point of view of the complete real-life context of Army plans and problems, to develop specific recommendations from the findings of the study and staff these as part of its function of review and integration outlined in sub-paragraph f above.

29. The following changes in the current Army assignments and organization would improve, on balance, the responsiveness of the Army study system:

a. Each Army Staff requirement for a study to be conducted by Combat Development Command should be forwarded to CDC through the ACSFOR who will correlate it with other studies underway by CDC for the Army Staff. In the event of disagreement between ACSFOR and

the sponsoring Staff agency as to the scope or priority of the requested study, it would be referred to the ASAC for the resolution of differences or for an appropriate recommendation to the Vice Chief of Staff if this becomes necessary. After the study is underway, the sponsoring agency would work directly with CDC along the lines set forth in subparagraph 28 c above. Requirements for studies by CDC from other major commands will be transmitted directly to CDC as before. In the event of disagreements as to need, scope or priorities, CDC may refer the problem directly to the AS. C.

b. Consideration should be given in the future to shifting the Army Institute of Advanced Studies from the Combat Development Command to become directly responsive to and under the supervision of DCSOPS. Aspects beyond the scope of this study should be considered at the same time.

RECOMMENDATIONS

30. It is recommended that the above conclusions be approved for implementation on a time phased and evolutionary basis.



SECTION 1
of
THE ARMY STUDY SYSTEM
The Problem

SECTION 1

THE PROBLEM

1. The directive initiating this study of the Army study effort is outlined in paragraphs 1 through 3 of the study "Summary". The directive itself is appended as Annex A. It should be read in full before proceeding.

2. This analysis of the Army study effort, aimed at deriving a basis for improvements in the Army study system, has of necessity covered a field almost as broad in scope as that of the entire methodology behind planning, programming, budget justification and other major decision-making processes in the Army and in the Department of Defense. Because of the wide spectrum of future conflict in which the Army, as a part of the Armed Forces of the United States, may have to be employed, and because of the increasing cost and complexity of new weaponry and new organizations, the use of modern study techniques as an aid in these processes is now important and will become increasingly so.

3. The techniques of study today, ranging from the simple staff study to the sophisticated use of operations analysis, gaming, systems analysis, cost analysis and other advanced procedures, involve the interrelating of military, scientific, economic, and other advanced disciplines. A worthy study must follow logical processes objectively and enable wise value judgments to be applied in subsequent decisions. Any effort to "systematize" our overall study effort must carefully plot its course between the dangers of over control and arbitrary direction on the one hand and disjointed, uncoordinated effort on the other.

4. One approach for analysis is to examine the subject in terms of: (a) the process for initiating studies; (b) the process for conducting them; and (c) the process for utilizing them. These areas have been examined in this analysis. In an effort as large and diffuse as that of the Army's, however, each of these areas requires more than procedural or methodological examination. The better use of studies involves complex problems of coordination, synthesis and, to a real extent, education. These too are examined. Problems of funding and the allocation of scarce resources, both in general and related to study resources, involving as they do the whole Army's organization and staff procedures, have also been reviewed.

5. It rapidly became clear as this analysis progressed that the problem areas outlined above involve, in various ways, each of the classic basic issues in the organizing of large efforts, namely the issues of: (a) "centralization" versus "decentralization"; (b) "functional" versus "project" management; and (c) "staff" versus "operational" or "command" procedures. Because of the varying objectives and applications of the segments of the Army study system it is clear that solutions to be sought in these areas can be neither black nor white.

6. A "study," no matter how simple or elaborate, is a form of organized, methodical thinking about a problem. "Thinking about problems" within the sphere of responsibilities of a senior commander or chief of a major staff agency is an obvious concomitant to the proper discharge of his responsibilities. Therefore, there can be dangers in the exercise of direct or undue control by some superior authority over the initiation and conduct of studies judged by a key officer to be important to the carrying out of his mission. Experience in industry as well as in the military indicates that undesirable duplications of effort can be avoided and available study resources efficiently utilized through mechanisms which primarily insure a general coordination of and a full information flow between decentralized study efforts. These mechanisms need be used only where essential to aid in resolution of the problems of unacceptable competition for resources or to effect the integration of study efforts and study results.

7. The problem of the degree of "control" required in the Army study system is complicated, however, by the fact that a sizeable portion of the Army study effort must be expended in response to "directed" studies initiated by the Office of the Secretary of Defense or other higher authorities. The essentiality and urgency of such studies, which are not initiated as part of regular study programs by major staff agencies or commands within the Army, imposes an unusual but very real requirement for higher level guidance and liaison, coordination and follow-through within the Army and with the Office of the Secretary of Defense in order to insure timely and valid response without undue disruption to the in-house Army study requirements.

8. Some feel of importance and size of the directed study effort in the Army today can be obtained by an analysis of the Chief of Staff Memorandums issued by the Secretary of the General Staff since last

August. In that seven month period 53 special studies have been the subject of CSM's. Of these, 21 were directed by the Office of the Secretary of Defense, 6 by the Office of the Secretary of the Army, and 20 by the Office, Chief of Staff. Six more originated within Army Staff sections, but required Chief of Staff authority to establish inter-agency working groups or necessary priorities. It must be noted that 16 of the studies "directed" by OSD were part of the formalization of the OSD CY 1964 Major Study Project List and most of them were already underway in the Army. Another indicator of the special study load on Army Staff agencies can be seen from the following figures. As of the last week in March 1964, 29 out of a total of the 190 staff officers in the Office of the Deputy Chief of Staff for Logistics were employed full-time or nearly so in special study projects and 15 out of the 60 in the Office of the Comptroller of the Army were likewise being used. Although only 4 out of 167 from the Office of the Deputy Chief of Staff for Military Operations were working full-time on special studies, the Strategic Studies and War Games Division of 10 officers were generally employed in the study area and 13 other officers were action officers generally responsible for the broad supervision of 15 specific special studies.

9. The recent major reorganization of the Headquarters, Department of the Army, taken in conjunction with the DOD-inspired new concepts for planning, programming and budget justification, is logical and should be effective. There are well recognized and important places within the new framework for the use of studies. At the same time the large number of special studies directed by higher authority, essential though they are, have required resources and effort to the extent that the normal procedures envisaged under the Army's reorganization are affected and the evolution of a smoothly running system has been delayed.

10. The large number of directed major studies has been necessary in large part because procedures and study programs previous to the reorganization of the Headquarters, Department of the Army, have inadequately met the need for the comprehensive examination and resolution of important problem areas. Hence, urgent reexaminations of certain programs and rejustifications of proposed actions have often been required. The lack in some cases of such timely logical justifications has to a degree affected the highest level decision-making involved in keeping Army developments in tune with the dynamics of the future. Gaps in our study effort can, at least in part, be held responsible for the large number of directed or crash studies needed to bring planning and program justification up to the new standards.

11. The above discussion has been in generalized terms. The true complexity of the problem of the better use of studies within the Army and a feel for the importance of better answers to it can be illuminated by examining several specific areas.

12. Figure 1 is a reproduction of a chart showing the "Life-Cycle of Army Materiel". Careful study of this rather awe-inspiring diagram highlights the current intricate and time consuming requirements for multi-phased guidance, coordination, study, analysis, and decision-making among and between the four overall headquarters involved (OSD, Hq DA, CDC and AMC) as well as the important part Industry plays in the procedures. It must be further recognized that within the four major headquarters shown there are at each step further complicated processes of coordination, decision-making and action involved within and between the internal Staff agencies concerned. A prime objective of this complicated system is to assure, so far as feasible, that the vast expenditures of money and professional effort involved in this "life-cycle of materiel" result in the best buy for the defense dollar. Therefore it is crucially important that the strategic and doctrinal guidance provided and, within this, the specific studies and analyses required, all rest on comparable, sound and realistic bases. The Army study system, from its strategic to its specific components, can play a significant role within the Army in the provision of the needed comparability, soundness and realism.

13. Another example of the complications involved in reaching sound and realistic decisions with the aid of special studies is in the overall area of Force Development, wherein new doctrine, new organizations and new materiel must be integrated. The impact of advancing technology on weaponry makes it imperative that the evolution of viable strategies, tactics and doctrine, and the organizations to carry them out, take fully into account the potentials of weapons and materiel, new and old. Military history is replete with examples of the importance of this and not solely in examples deriving from "quantum jumps" such as the invention of gun powder, of the airplane or of the nuclear weapon. A classic example is the battle of Agincourt in 1415 where the tactical use of the British yeoman with his long bow against the heavily armored knights of France won the day, changed the course of history and initiated a new technique of battle in which the heavily armored horseman rapidly became obsolete -- and this at a time when the use of gunpowder was already known to the Europeans. It is more dangerous



LIFE-CYCLE OF ARMY MATERIEL

RESEARCH*

EXPLORATORY DEVELOPMENTS*

ADVANCED DEVELOPMENTS*

QMR

ENGINEERING DEVELOPMENTS*

OPERATIONAL SYSTEMS DEVELOPMENTS*

CLASSIFICATION

PROCUREMENT & PRODUCTION
SUPPLY MAINTENANCE
DISTRIBUTION

DISPOSAL

1 AUGUST 1963

AMC
DEPT ARMY
CDC
INDUSTRY
DOD

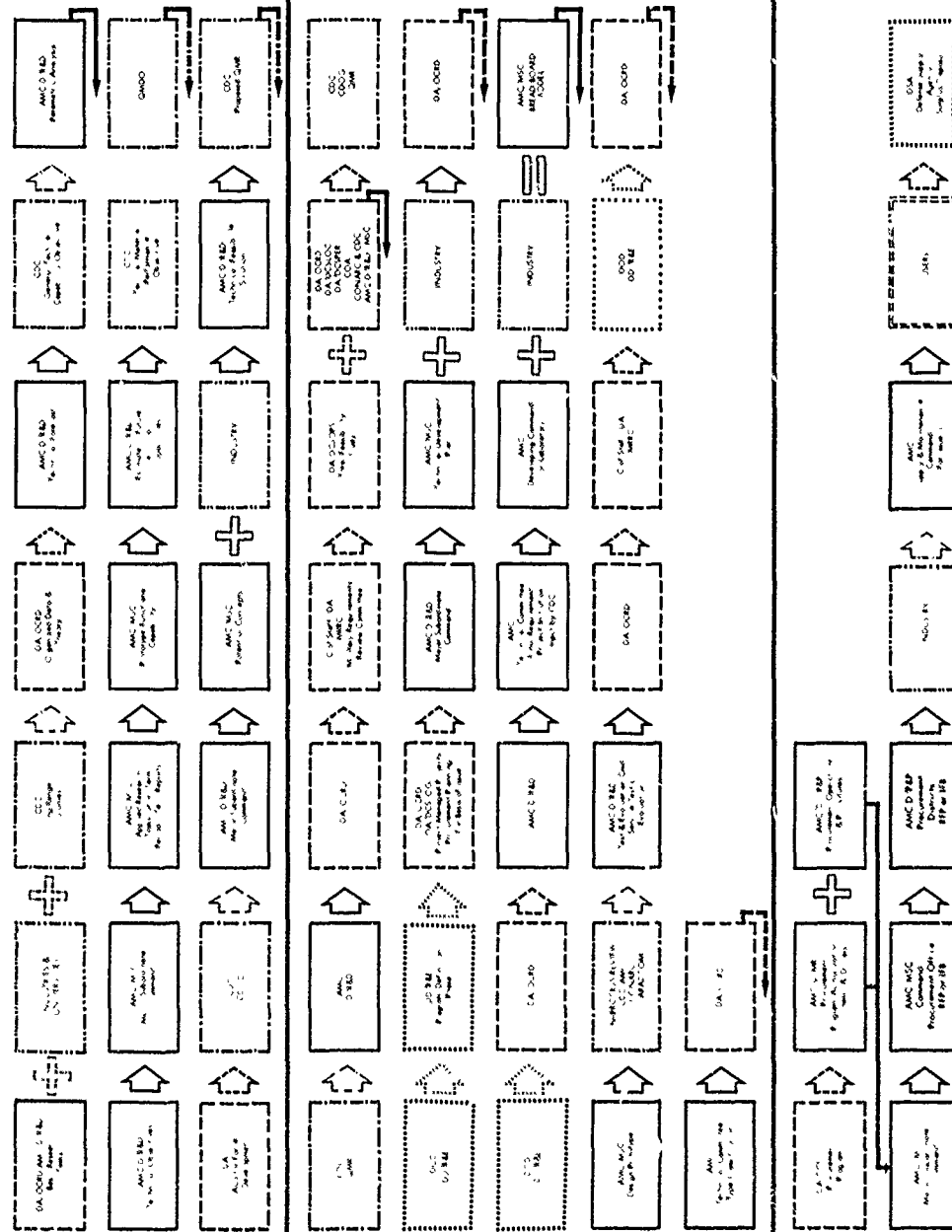


FIGURE 1

FIGURE 1

today than ever before to try to fit the development of new weapons or materiel into pre-established strategy, doctrine, tactics or organization, although this tendency remains as difficult as ever to overcome.

14. Modern study techniques, integrating the military and scientific disciplines, permit by analysis, synthesis, multiple gaming and other techniques, the necessary feedback of the effect of new weapons into organizations and both back into tactics and doctrine. When desired, the effect of all these as fed back into strategy can be developed. Use of "net evaluation" studies, comparing realistic US capabilities against enemy capabilities can be useful in a wide range of analysis of uncertainties implicit in the future by examining a range of alternatives. Going further, modern study techniques permit this process to be carried on to even more sophisticated ends. It is possible in a broad sense to game out, for instance, a potential enemy's probable reactions to our development of a new strategy or of major new weapons, then to game our best reactions to the potential enemy reaction and so on. In the current world, with a spectrum of possible conflict ranging from nuclear holocaust to guerrilla warfare, terrorism and subversion and when our defense budgets exceed fifty billion dollars annually, these are "games" to be played in deadly earnest and become of vital importance.

15. Still another specific area where the effective use of study techniques can be of help is in relation to Program Change Proposals. The PCP procedure is a keystone in the Secretary of Defense's concept for budget formulation -- a procedure which marks an inevitable step forward in the rational and systematic determination and allocation of the Defense budget. The makeup of any one Service's budget is now highly dependent on the logical and valid support of its PCP's. Such support must include strategic, tactical, and economic considerations as well as more specific and technical analyses involving system analysis, feasibility studies, cost analysis and others. Among the three Services, the Navy has recently developed an increasingly effective system for orienting and integrating a sizeable part of its study effort in support of its PCP's.

16. Returning to broader consideration, the cumulative impact of reorganization, plus the large number of directed studies, has tended to create in the minds of some senior officials, both within the Department of the Army and at higher levels, a belief that the Army's planning and programming system is not as effective and thorough as it could be.

Nevertheless, analysis of the new system as it is expected to work when it has shaken down indicates that it can be both effective and thorough. Because of the increasing importance of formal studies as adjuncts to planning and programming and as aids to decision-making, it appears that the best way over the long run to lessen the numbers and impact of the directed or "crash" studies is to insure that the Army study system itself improves steadily in comprehensiveness, validity and timeliness so that its results are not only more useful to the Army but also gain the respect and confidence of the higher echelons of our government.

17. As stated earlier, the study effort is in support of and hence inextricably a part of the Army's planning, programming and decision-making processes. It is clear that these processes are also being subjected to dynamic and imaginative review and evolutionary improvement at all levels within the Army Staff and the major commands. Any specific comments on possible improvements in procedures or techniques are beyond the scope of this report, but where ideas on such changes have been derived from the analysis and could help improve the Army study system they have been or will be brought to the attention of the Staff agency chief or major commander concerned.

18. A quite different aspect of the overall problem arises from the varying degrees of understanding to be found throughout the Army of the value and importance of the use of advanced study techniques in relation to defense problems. Emotion sometimes rules logic in this judgment, however clear it may be that operations analysis provides one of the few sound tools to assist in the making of many of the important decisions affecting the modernization of our armed forces and hence the future security and freedom of our country depend. There remain many misconceptions, exacerbated in these days of swift technological advance, as to the part to be played in decision making by the application of the scientific method to the analysis of problems. Among the most widespread is the belief that studies are used to provide the answers to complex problems when, in fact, no knowledgeable person would presume so to do. Properly, studies do not and can not substitute for wise and informed judgment. What they can do is provide an orderly and logical clarification of the factors to which judgment must be applied.

19. Improved education, both general and technical, will play an important part in the achieving an Army study effort optimized for balance and utility.



SECTION 2
of
THE ARMY STUDY SYSTEM
The Army's Current
Study Effort,
Systems and Facilities

SECTION 2

THE ARMY'S CURRENT STUDY EFFORT, SYSTEMS AND FACILITIES

1. Eight formally organized study programs are underway within the Army. These are: (a) the study projects managed and conducted by Combat Development Command and recorded in Section II of each chapter of the Combat Development Objectives Guide; (b) the "wholesale logistics" study program managed and conducted by Deputy Chief of Staff for Logistics/Army Materiel Command and recorded in the "Department of Defense Bibliography of Logistics Studies and Related Documents"; (c) the Strategic Studies Program managed by Deputy Chief of Staff for Military Operations and conducted as segments of the other study programs and by elements of the Army Staff; (d) the Personnel Research Studies Program managed by the Chief of Research and Development, conducted by the US Army Personnel Research Office; (e) the three major contract research study efforts which exist specifically to support the Army, are managed by the Chief of Research and Development and are conducted by Research Analysis Corporation, Human Resources Research Office of the George Washington University, and Special Operations Research Office of The American University; and (f) the major study effort managed by the Chief of Research and Development and conducted as a portion of a much larger study program by Stanford Research Institute. The latter five study programs are recorded in the various individually prepared work programs and bibliographic listings of each agency.

2. A less formally organized group of studies also exists. This consists of certain special studies conducted within the Army Staff as the need arises. These studies are managed through normal staff procedures and are monitored by the Staff Action Control Office, Office Chief of Staff. Most are recorded in the Army Status Report prepared bi-weekly by the Comptroller of the Army for the Secretary of the Army.

3. Within Headquarters, Department of the Army, studies are not conducted as part of an overall formal study program. There is one sub-program, the Strategic Studies Program of ODCSOPS. Another sub-program, not organized by subject category, however, is the contract operations research program under the Chief of Research and

Development. Studies which are not in the Strategic Studies Program are undertaken with Staff agencies in response to internal needs, by direction of the Chief of Staff, and by direction of the Secretary of the Army or Secretary of Defense. Special study requirements which originate with the Chief of Staff or higher offices, as well as most of those which are initiated in Army Staff agencies, are formally confirmed and announced by the mechanism of a "Chief of Staff Memorandum" which defines the scope of, and assigns responsibilities for, each study. The Comptroller of the Army includes in his bi-weekly Army Status Report to the Secretary of the Army a selective listing of major studies in progress. While no explicit coordination or control is exercised in connection with this report, it is prepared at the direction of the Secretary of the Army and is reviewed in the Office of the Chief of Staff as well as in the Office of the Secretary of the Army.

4. At the request of the Secretary of Defense, the Army recommended 22 studies for inclusion in his CY 1964 list of projects. Of these, 15 were identified by the Secretary of Defense as being of particular interest and on which he desired interim reports. Subsequent to the date for the interim reports, the Secretary of Defense issued a list of 32 "Selected Projects for CY 64". This list contains four studies assigned to the Army for action and another 20 which will require Army contributions to studies assigned to the Joint Chiefs of Staff or Assistant Secretaries of Defense. The list confirms some studies already underway, re-orientes others, and adds some new studies which must be initiated. The impact of this list of projects is evaluated in the Offices of the Secretary of the Army and Chief of Staff and appropriate instructions are issued by CSM to re-direct or initiate studies as required.

5. Development, monitoring and coordination of the Army Strategic Studies Program within the Army is accomplished by DCSOPS. Only a very few of these studies are conducted totally within the Army Staff, and those done by other agencies are also included in the study programs of the Combat Development Command, or of the Research Analysis Corporation, Stanford Research Institute and other operations research contractors which are coordinated by the Chief of Research and Development. Substantive influence is exerted by DCSOPS representation on the Army Operations Research Steering Committee and the Project Advisory Groups for strategic studies. Additionally, DCSOPS has designated the Strategic Studies and War Games Division

RELATIONSHIP OF STRATEGIC STUDIES TO ARMY AND JOINT PLANS

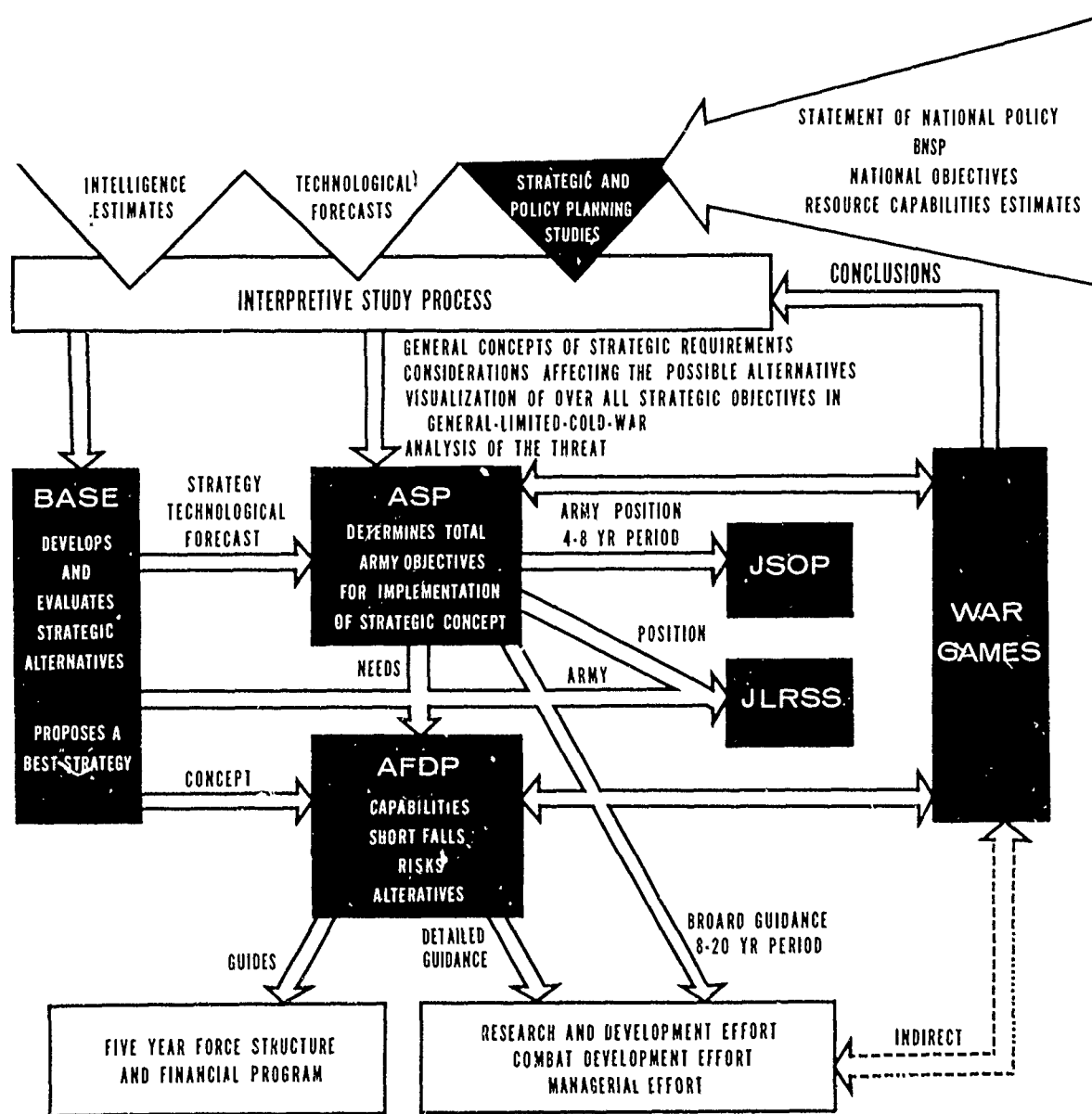
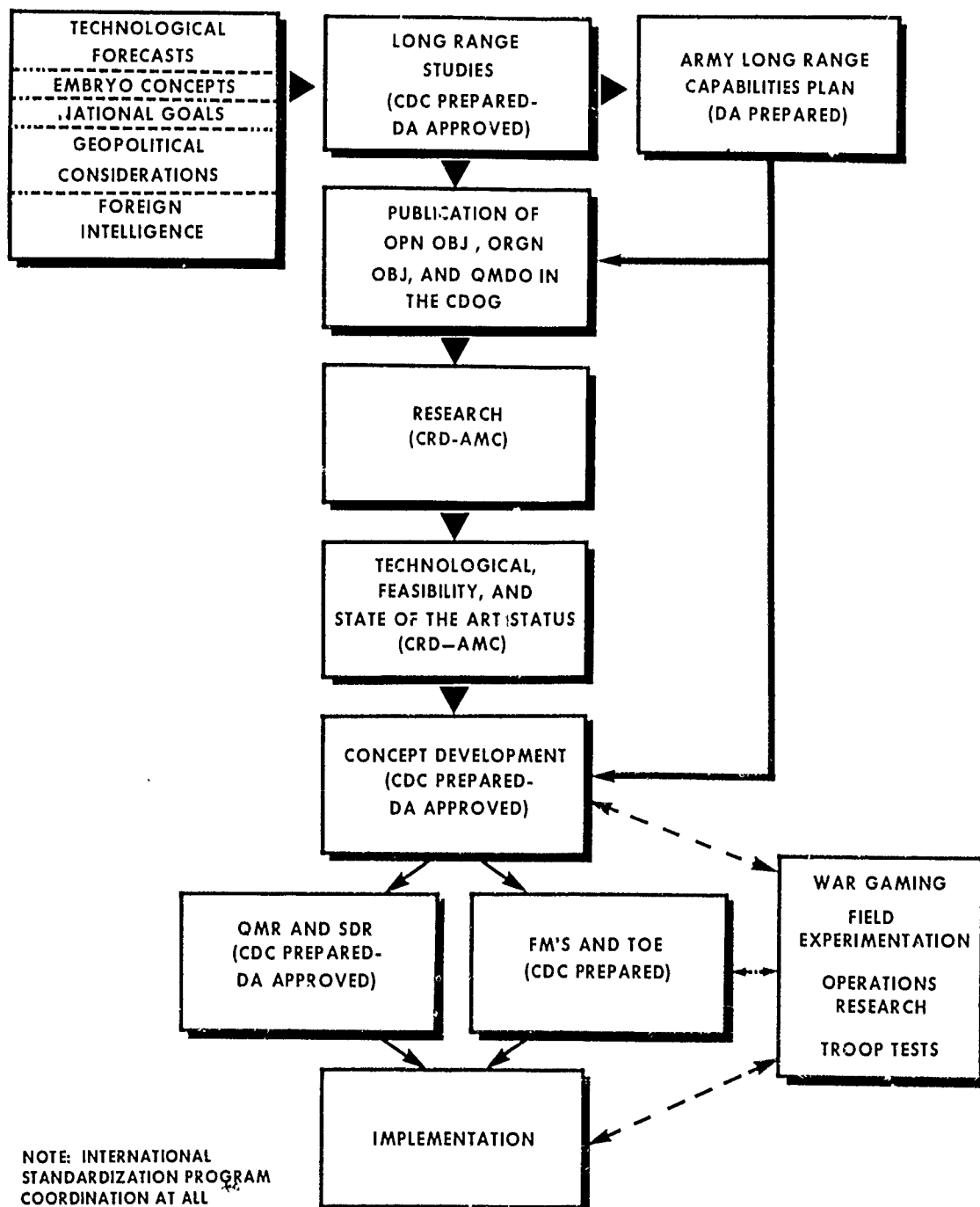


FIGURE 2



U.S. ARMY COMBAT DEVELOPMENTS



A-1-J-8

FIGURE 3

as the Staff element responsible for supervising the Army in-house and contract strategic study effort. Supervision by DCSOPS is exercised by approval of study proposals, assignment of priorities and approval of the selection of the study agency. DCSOPS maintains a reference index of current and projected strategic studies and intends to publish a Strategic Studies Catalog. The relationships of the Strategic Studies Program with the Army planning system is portrayed in Figure 2.

6. The CDC study program is a major element of the combat development procedures established in AR 71-1. The basic framework and relationships among CDC, LMC and Hq, DA is shown in Figure 3. It is made up of studies which have been proposed by the Army Staff, the CDC staff and subordinate agencies and by other major Army commands. The program is revised annually by CDC and is forwarded to ACSFOR for DA review and approval and publication in Section II of each chapter of the CDOG. Most studies are accomplished by the subordinate combat development agencies of CDC. Most contract studies, when required or desirable, are submitted to CRD for inclusion in the contract operations research program although about 25% of the contract studies are included in a program developed and funded within CDC. In 1963, 75% of the available CDC in-house study capability was scheduled for use on the formal study program and 25% was left uncommitted for use on unprogrammed study requirements. However, directed studies or other unprogrammed study requirements actually required about 65% of the available study effort and the planned CDC study program schedule was consequently delayed. CDC is charged by AR 71-1 with recommending to DA changes in organization, doctrine, and equipment requirements. The CDC study program which contributes to the determination of these recommendations is decentralized to the extent that the majority of studies are initiated by subordinate functional combat development agencies and are conducted by the same agencies. The basis for study programs is currently being modified to focus the CDC study effort more closely on the realities of the future strategic environment and the requirements of the Army planning system. These improved relationships are portrayed in Figure 4. Headquarters, CDC, coordinates and monitors the overall CDC study program to insure its consistency with and application to approved Army objectives and to reduce voids and overlaps. CDC maintains close liaison with MC in the formulation of its study program and the two commands



PATTERN FOR COMBAT DEVELOPMENT STUDY PROGRAM

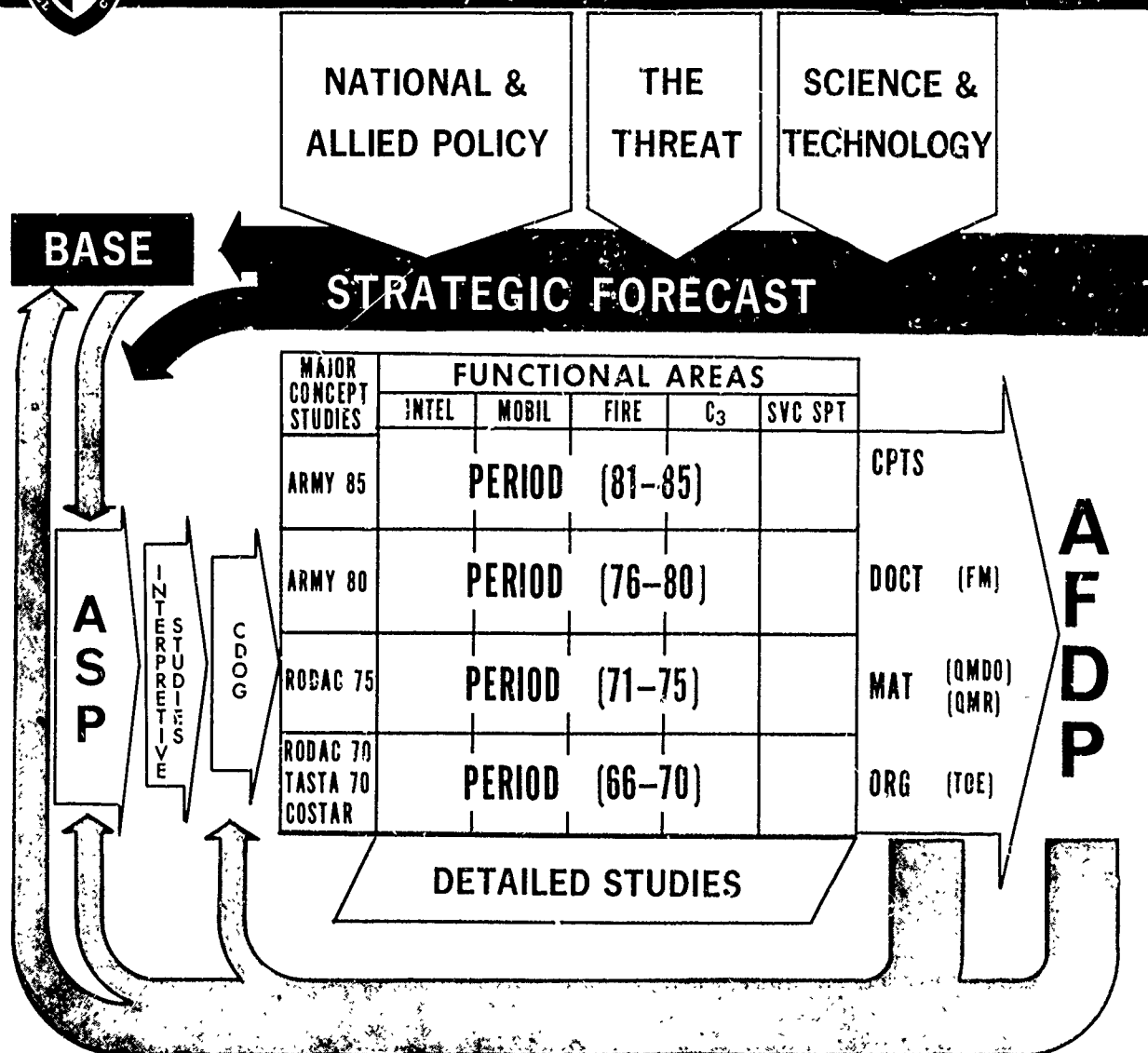


FIGURE 4

AMC R & D CYCLE



support each other with studies in order to capitalize on particular expertise. The size, scope and increasing importance of the CDC study program indicates that special attention should be given to Hq, CDC requirements for increased numbers of military and civilian personnel qualified by education, experience and training in the use of modern study techniques. As can be seen, a major difficulty in the CDC program arises from the large number of unprogrammed studies which CDC is required to do for Army Staff agencies, to include studies directed by OSD. Each Staff agency can currently make requests directly on the CDC for required studies. A suggested procedure for coordinating and establishing priorities among these requests for studies is set forth in the conclusions of this report.

7. The Army Materiel Command study program is currently a decentralized effort, with studies being initiated and conducted by the component commands and agencies of AMC. While the present effort is derived from the study activities of the old Technical Services, it is being integrated into a formal Logistics Studies Program which receives direction from Hq, MC, and which is coordinated and developed by the Logistics Management Center at Fort Lee, Virginia. Additional studies are integral parts of the research and development process, as is shown in Figure 5. The Logistics Study Program is intended to be directed toward attainment of approved Long-Range Logistics Objectives developed and announced by the Management Science Office of Hq, AMC, which is also the staff agency charged with supervision of the study program. The Logistics Management Center is responsible for development of the annual logistics studies program, for monitoring the program, and for reporting to Hq, AMC, on voids and the overlaps, as well as for reviewing and evaluating the completed studies to insure application of useable findings, and for maintaining liaison with other DOD logistics research agencies and appropriate civilian contractors. In addition, the Logistics Management Center maintains the Defense Logistics Studies Information Exchange for the Department of Defense and publishes a catalog of logistics studies.

MC research and development studies are conducted as elements of its research and development functions and are not included in a formal study program. The AMC study program is also affected by the large incidence of unprogrammed study requests placed upon AMC by the Army Staff and other commands. The problem is perhaps not quite so acute as is CDC's problem in this regard and no specific solution is proposed in this report. However, the mechanism to coordinate and

and correlate the Army study program, which is recommended later in this report, can review the problem, if it becomes necessary.

8. All Army operations research studies which exceed \$100,000 in contract costs, regardless of the agency for whom the study is being performed, are reviewed, coordinated and approved by CRD, who is also furnished a copy of all other operations research studies regardless of contract cost, and a copy of the final reports. The Army Operations Research Steering Committee meets semi-annually to review the contract operations research study program, to advise CRD on the program, and to evaluate the contractors' performance. The AORSC is composed of the Director of Army Research (Chairman) and representatives from Army Staff agencies and major Army commands in CONUS. A Project Advisory Group is established for each project or study contract. The Chief of Research and Development, in coordination with interested agencies, determines the composition of each group and normally designates as chairman the representative of the agency with primary interest. The PAG meets at least once every three months to review the work and furnish advice and assistance to the contractor. While the OCRD may not be the staff agency with primary substantive interest in many cases, it is administratively logical to include these functions with the remainder of the RDT&E fund administration which is the responsibility of that office. In addition, this procedure establishes a single point of contact in the Army Staff for operations research contractors. The Army Research Office within the Directorate of Army Research in OCRD is the specific agency which administers RDT&E funded operations research contracts in Hq, DA, in accordance with AR 1-110.

9. The Director of Special Studies, Office of the Chief of Staff, has been designated to analyze the special study activities throughout the Army and to develop a methodology which will improve the overall utility of special studies to the Army. As an additional function, the Director of Special Studies functions as chairman of Department of the Army steering groups for certain designated special studies of particular importance to the Chief of Staff. The steering group for each such study includes representatives of Army Staff agencies with interest or staff responsibility for the study, and is charged with providing guidance, monitoring development of, and reviewing the study.

10. Expressed in terms of dollar cost, as well as manpower commitments, the Army study effort does not appear excessive in relation to the return being realized. It is estimated that special studies, made by or for the Army in FY 63, cost a total of \$29,521,000, or .25% of the Army budget. About two-thirds of this figure represents the cost of contract studies and the remainder the cost of in-house studies. These cost data are only approximate.

11. The \$19,179,000 costs in FY 63 for contract studies are summarized by sponsor in the following table:

OCRD	\$12,596,000
ODCSOPS	1,602,000
CDC	1,260,000
OCE	1,050,000
AMC	840,000
OCC-E	601,000
COA	314,000
OCofT	246,000
Others	670,000
<u>TOTAL</u>	<u>\$19,179,000</u>

Of these costs, it should be noted that about half of the ODCSOPS cost (\$823,000) is for studies supporting the Strategy and Tactics Analysis Group and most of the remainder (\$620,000) is for the cost of Special Warfare area handbooks. The OCE cost is relatively high because of a concentration of studies of military nuclear power applications (about \$900,000).

12. The costs of in-house studies are less susceptible of accurate determination than are contract studies. The estimated figures below are based on identification of sub-agencies engaged in full-time studying and on a reconstruction of the costs of ad hoc study groups. The estimates of major in-house study costs, by agency are:

CDC	\$ 3,395,000
DCSOPS	1,625,000
	(of which STAG computer services are \$1,000,000)
MC	1,511,000

CRD	1, 270, 000
Army Audit Agency	787, 000
OCE	620, 000
Others	1, 136, 000
<u>TOTAL</u>	<u>\$10, 344, 000</u>

Of this total, about \$650,000 can be attributed to ad hoc study group costs, primarily travel and per diem, and the remainder to the costs, primarily pay, of permanent study organizations. Army-wide, about 700 professional military and civilian personnel are engaged in full-time in-house study agencies or facilities, and they are supported by about 275 administrative personnel.

13. The bibliography of studies appended to this report (Annex D) lists most of the major Army special studies conducted since July, 1962, and therefore, statistics derived from it do not correlate directly with the costs discussed above, which cover only FY 63. However, the ratio of contract to in-house studies in the bibliographic list (Annex D) is 15% contract studies as against 85% in-house and this ratio when compared with relative costs in FY 63 of total contract and in-house study effort, suggests that the Army pays somewhere around two-thirds of its study bill for the 15% of the studies which are done by contract. The higher cost-per-study for those done by contract is partly a result of the fact that studies are usually not contracted unless they require substantial specialized effort. \$10,000,000 of the \$19,179,000 contract study costs are the costs of the full study and war gaming capabilities of the Combat Operations Research Group at CDC and the Research Analysis Corporation, and the major study effort done by Stanford Research Institute in support of Army study projects.

14. Budgeting and funding deserve attention since it is these processes, in addition to personnel availabilities, which impose pragmatic limits upon the ability of the Army Staff and major commands to conduct unprogrammed studies. Two appropriations provide funds which are used in special studies. Both Research, Development, Test and Evaluation (RDT&E) funds and Operations and Maintenance, Army (O&M, A) funds are used for special studies. The Appropriation Director and Program Director within the Army for RDT&E funds is CRD, who programs, budgets and allocates these funds among Army agencies. The Comptroller of the Army is the Appropriation Director

SPECIAL FUNDING AND BUDGETING FUNCTIONS OF DA STAFF AGENCIES

AGENCY	ADMINISTRATIVE FUNDS	O&M, A	RDT&E	FISCAL OPERATING AGENCY
OFFICE, SA	Approve and fund contracts & certain support for Hq, DA Agencies			•
OFFICE, CofS Staff Mgt Div	Allocate and manage certain O&M, A funds for administrative use of Hq, DA Agencies			•
COMPTROLLER	Internal funding for Army Staff allocated to Staff Management Division OCofS	Appropriation Director, O&M, A funds		
DCSPER	Supported by SMD, OCS for civilian pay and travel funds, OSA for supplies and certain contract services	Program Director BP 2500 (Army-wide activities)		
DCSOPS	"		Coord w/CRD requirements for strategic studies (BP 5000)	
ACSFOR	"	Program Director BP 2000, 2100 (tactical forces tng)	Coord w/CRD requirements for funds for CDC (BP 5000)	
DCSLOG	"	Program Director BP 2300 (Major maint & overhaul)	Coord w/CRD requirements for funds for AMC (BP 5000)	
ACSI	"	Program Director BP 2800 (Intelligence activities)		•
CRD	"		Appropriation and Budget Program Director RDT&E funds.	

FIGURE 6

SPECIAL FUNDING AND BUDGETING FUNCTIONS OF DA STAFF AGENCIES CONTINUED

AGENCY	ADMINISTRATIVE FUNDS	O&M,A	RDT&E	FISCAL OPERATING AGENCY
CORC	Supported by SMD,OCS for civilian pay and travel funds, OSA for supplies and certain contract services	Program Director BP 2600, (Reserve & ROTC)		
TSG	"	Program Director BP 2400 (Medical Activities)	Manage some allocated RDT&E funds	•
OCE	"		Manage some allocated RDT&E funds	•
OCC-E	"			•
TAG	"			•
NGB	"			
OCofin	"			•
OC&T	"			•

for O&M, A funds. He programs, budgets and allocates these funds on advice of designated Budget Program Directors in the Army Staff (Figure 6). Little flexibility exists in the use of funds within the Army Staff, once they have been appropriated and allocated in accordance with the budget. Major commands which have programmed for and are funded for continuing in-house study organizations, constitute a major reservoir of study capability within the Army to undertake special studies on shorter notice than the program-budget cycle, since the readjustment required is not usually fiscal, but rather, is in the scheduling of the studies conducted by the study organization in question. The operation research contractors who are sole contractors with the Army, or who provide continuing major support to the Army, also can be used within broader limits to undertake unprogrammed studies, but again only at the expense of delay or disruption to some degree of planned programs. In the cases of both in-house and contract organizations, the number of capable individuals available to the organization is also a limiting factor. Provided funds can be made available contractors generally have more flexibility in augmenting their staffs temporarily with specialists than do in-house organizations.

15. The Army management structure, and the responsibilities of Army Staff agencies with respect to the development of programs and budgets introduce opportunities to program for needed special studies but limit the Army's capabilities to undertake unprogrammed studies. The O&M, A Appropriation and Budget Program Directors (Figure 6) provide for special studies in the programming process. The CRD can similarly program special studies in his role as Appropriation and Program Director for RDT&E funds. All of these budget elements are subject to varying reviews, both within Department of the Army and in the Department of Defense. As an example, Army Budget Program 2800 (Intelligence Activities) for which the Assistant Chief of Staff for Intelligence is the Budget Program Director, must be approved in detail by the Defense Intelligence Agency and in the Office of the Secretary of Defense before it can be made a part of the Army budget submission. Budget Program Directors, however, because of their central roles in advising the COA on reallocation of funds when required, have a particular opportunity to provide for special studies which can be anticipated in the programming-budget cycle, and, more frequently, for those which have not been anticipated far enough in advance to be in a program.

16. Many special studies which are undertaken within the Army Staff require the assembly of ad hoc groups for limited periods of time, and the expenditure of travel funds which were not specifically anticipated in the budget. These unbudgeted and unprogrammed studies are of three types: OSD directed, Secretary of the Army or Chief of Staff directed, and those proposed by Staff agencies. If the funds required exceed those available in the operating program of the sponsoring Army Staff agency, the Staff Management Division, Office of the Chief of Staff, attempts to arrange a reallocation of funds among the Staff agencies' programs, while remaining within the total allocated for the Army Staff. If this is not possible, the Comptroller of the Army, with the advice of the appropriate Budget Program Director, reallocates funds from other commands to increase the amount available to the Staff to support the travel required, or determines that the study must be accomplished within funds available to the Army Staff agency. Most ad hoc studies must be accomplished under the latter limitation - that is within funds available to the sponsoring Army Staff agency. The status of Program Directors and Operating Agencies in the Army Staff tend to give those Staff sections some added flexibility in conducting an unprogrammed special study.

17. The CRD is both the Appropriation Director for RDT&E funds and the Director for the Budget Programs within the RDT&E appropriation. As such, he develops the Army Research and Development Program and budget, to include operations research requirements, and allocates RDT&E funds to Army agencies. Programmed operations research includes relatively broad and flexible program elements and tasks, which permit flexibility in adjusting research programs as they progress and as their details can be refined. This flexibility can be used to accommodate these unprogrammed study requirements which qualify as operations research. Additional flexibility is within the authority of the CRD in that he may reprogram funds from one element to another in amounts up to \$2,000,000 in each action, providing he does not create a new element or remove all funds from an established element.

18. The Army study programs reflect the Army's diversity in centralized as opposed to decentralized functions, functional versus project management, and staff versus command techniques of integrating effort. Strategic studies, few in number but of basic importance

and broad in scope, are centrally coordinated but are conducted through decentralized and flexible arrangements which draw upon a variety of sources and study capabilities. The more numerous and more specific combat development studies are planned and conducted on a decentralized, functional basis, within the command authority and responsibility of the Commanding General, CDC, but are subject to staff review in the Army Staff. The contract study programs cover the full range of Army missions and responsibilities. Substantive direction, review and use of this effort is accomplished through the JORSC and PAG mechanisms, which include interested Staff and command agencies. When these coordinating mechanisms function imperfectly, the CRD, as the Program Director for RDT&E funds, is thrust into an authoritative role, even though the substance of the study or program in question is the primary responsibility of another Staff or command agency. The decentralized study apparatus now in existence has developed in response to requirements for studies within the various agencies of the Army. It is responsive to the needs of those agencies. Integration of portions of these fragmented activities has developed to a limited degree where the need was obvious, particularly for the allocation of insufficient resources. There is no formal system for the exchange of study information among the various study systems, nor is there an Army-wide mechanism to allocate restricted resources to meet the increasing requirement to conduct unprogrammed studies directed by headquarters superior to that of Department of the Army.



SECTION 3
of
THE ARMY STUDY SYSTEM
Definitions, Categories
and Techniques

SECTION 3

DEFINITIONS, CATEGORIES AND TECHNIQUES

1. It has become apparent during this analysis of the Army study effort that the terms and definitions used in relation to studies do not always have commonly understood meanings, even among those who work intimately with these activities. This condition is not surprising, since this is a dynamic field with an expanding vocabulary of technical terms whose meanings are still evolving. Additionally, most are abstract terms which at best are not susceptible of precise definition. It is, therefore, necessary in order to clarify the scope of this study to make some rather arbitrary definitions and categorizations.

2. From among a variety of definitions to be found in Webster's dictionary, the following apply to the word "study" as used in its general sense in this analysis: "The act or process of applying the mind in order to acquire knowledge"; "a careful attention to and critical examination and investigation of any subject"; and "the product of study, specifically a written dissertation embodying the results of a particular investigation?" The Dictionary of United States Army Terms (AR 320-5) states: "Study -- a detailed consideration of a specific condition or situation based upon a careful evaluation of information and factual data already available." Lacking in these definitions is the explicit statement that the drawing of findings, conclusions or alternative conclusions and frequently recommendations are recognized as the final step in the usual formal study process. Interestingly, the AR 320-5 definition also does not cover one of the salient features of the study which is set in a future time frame -- the frequent need to develop or assume data which is not "already available".

3. It is next necessary for the purposes of our analysis to establish several more definitive but still general sub-divisions of terminology within the broad meaning of "study" discussed above. The first type or sub-division is the time honored "staff study", routinely used by a staff officer in the conduct of his normal business. The term "staff study" is not defined in AR 320-5 but the following definition is in the Staff Officers Field Manual, FM 101-5: "A staff study is a formal staff paper containing a concise and accurate analysis and a recommended solution to a problem. It is the result of military research and conveys to the commander or other superiors a report

of the analysis made by the author, together with his conclusions and recommendations. It assists the commander in making a decision." FM 101-5 also contains the prescribed format for a staff study. Staff studies have long been part and parcel of normal staff operations.

4. The second type of study is the "special study," considered herein to be a formal study, using sophisticated study techniques, of a subject of major importance or impact on Army planning, force development or operations. The "special study" is further considered to be one which must be performed by a study organization, either temporary or permanent, and it can be either an in-house Army effort, or performed wholly or in part by a contract study agency. To be of practical utility a "special study" must be recorded in a written report and must draw findings, conclusions or alternative conclusions and, when so directed, recommendations. The definition of the term "special study" as used herein is: "A formal study, recorded in document form, which is conducted by an ad hoc or permanent study organization which may be an in-house agency, a contractor or any combination of in-house and contract effort. A special study requires more comprehensive research and analysis techniques than can normally be accomplished by staff officers in a "staff study" and also is broader in scope and the factors considered than most technical, procedural and engineering studies. The emphasis is on the analysis and synthesis of a variety of factors, leading to conclusions which can make substantive contributions to planning, programming and decision-making."

5. It will be noted that this definition of a "special study" distinguishes it from a "staff study" in that it is a study of broader scope and complexity than would be within the capability of and time available to a staff officer or agency in the conduct of normal business. However, mere size and complexity in scope or technique includes a very large and diverse group of studies more formal than staff studies, but which are excluded from the term "special study" as used herein. This exclusion is purely arbitrary and is made only to establish the parameters of our analysis. This excluded and imprecise grouping of studies is the third type or sub-grouping, which we will call "technical studies". It comprises technical studies associated with direct research and development processes, specific engineering and procedural studies of logistics, administration and management, and

combat development studies of specific organizational, materiel and doctrinal questions which are not of sufficient scope or broad importance to require major review and coordination by the Headquarters, Department of the Army. Since studies in this grouping generally are directed toward solution of specific problems or treat specific subjects which lie within the missions of major subordinate commands of the Army, they are not treated in detail within the overall Army "special study" problem on which this study concentrates its main attention.

6. Still looking, however, at the overall Army study effort, we find a great variety in the studies which are undertaken in response to internally recognized needs, or to direction from the Secretary of Defense or Joint Chiefs of Staff. At one end of this complex of studies are those on quite specific subjects which are necessary for decisions on operational matters or research and development, logistical, administrative, engineering, or management processes. At the other end are broad, long-range studies of national and international affairs and the inter-relationships of these affairs with military factors, to be used as the basis of military contributions to the formulation of national security policy and national strategy. Between these extremes are a diversity of types of studies, some broad and abstract, some intricate, computer-supported and specific, some synthesized from previous studies, some performed by a single staff officer, some performed by in-house groups of 100 or more civilian and military professionals, and some done wholly by contract research institutions. Any attempt to make a more detailed structure of this complex of studies requires an evaluation, based upon the expected use of the categories, as to the most useful type of more detailed categorization. Studies may be categorized by subject, by study agency, by techniques employed, or according to the purpose for which the study was done. Before deciding upon a more precise categorization of studies, however, it is necessary to clarify some of the terms which must be used, and to fix definitions for some terms whose meanings are still dynamic and not uniformly agreed.

7. Study techniques vary from the simple applied thought process to the complex processes of "modern study techniques". The latter connotes the application of the "scientific method", frequently making use of "operations research", computers and war gaming. "Systems analysis", "cost analysis", "net evaluations" and other specific techniques are closely related to operations research within

the meaning of "modern study techniques". The Army Dictionary defines operations research as "The analytical study of military problems, undertaken to provide responsible commanders and staff agencies with a scientific basis for decision on action to improve military operations. Also known as operational research, operations analysis." A variety of techniques other than operations research exist for the conduct of special studies. Selection of the best technique for each study is a function, among others, of the objective, of time available, manpower and other resources available, the amount of previous study on the subject, and the degree of detail in the analysis required. In increasing order of complexity, some of the major approaches are logical problem-solving using methodical processes such as the "estimate of the situation" or "staff study" approach; synthesis of previous studies with necessary updating; and progressive degrees of use of operations research, war gaming, etc., to carry out sophisticated analysis and synthesis upon which objective conclusions can be reached or alternative solutions set forth.

8. More detailed categorization of studies can serve primarily to facilitate information exchange, storage and retrieval and to clarify responsibilities of staff and command agencies for the supervision or monitoring of portions of the overall study effort. A further potential, if properly developed, is to use categorization in such a way as to aid management and review of the overall program. Evaluation of the overall major Army study effort should be possible so as to identify gaps where study could profitably be started, and to review current efforts to identify required reorientation of emphasis. A proper categorization of studies can serve to highlight broad areas which would profit by new or increased attention by certain elements of the Staff and command structure, and can also serve as a means to clarify for each agency how its studies fit into the overall study effort. The categorization by subject and sub-subject developed for use in the cataloging, information and retrieval system described in Annex C of this report is intended to provide a first try for a contribution to an effective integration of the Army study effort along these lines. It would be used as a basis for the composition of periodic bibliographies, would be the basic structure of the retrieval system, and at the same time would group studies in such a way that nearly every Staff agency would be sponsoring studies in more than one category, and thus would be reviewing its studies in a broader context than just that of its own interests.



SECTION 4
of
THE ARMY STUDY SYSTEM
The Future World Environment
and Army Studies

SECTION 4

THE FUTURE WORLD ENVIRONMENT AND ARMY STUDIES

1. A comprehensive and realistic consideration of the definable trends in the world scene, projected as reasonably far in the future as feasible, is an essential background to an optimized Army Study Program, just as it is to our Army planning and programming. Unless the basis of our study program is clearly relateable to the best possible projections of the real world of the future, the results of studies may be deceptive. To establish this basis of "projected realism" is most difficult. Obviously no single projection can pretend to be authoritative. The definition of major trends is, however, possible and a selection of alternative projections covering such trends can provide a clearer picture of the possibilities in the future world environment. Care must be taken in the utilization of environmental projections in the study effort lest they inhibit "break-through" thinking, but without them no sound basis for validity judgments can exist.

2. Some of the important emerging political elements in the future world picture which are illustrative of the need to keep the potentials of the real world always in mind are outlined in the paragraphs following.

3. In the foreseeable world scene, there appears to be no question but what the Communist World, and most importantly the Soviet Union within it, will remain the strongest, most sophisticated and thus the most dangerous adversary in the continuing struggle to attain our long-range US national objectives. However, the cracks developing in the monolithic Communist Bloc because of the emerging strength and independent posture of Red China is a separable trend to be increasingly reckoned. Currently, the shift towards the poly-centralism of power in the Communist World arising from the policies of the Chinese leaders and the rise of national over ideological ambitions has advantageous as well as disadvantageous implications from the point of view of long-range US national security. Certainly the Army should be taking a good look at the politico-military problems and opportunities that would result from such conceivable developments as a protracted US-USSR detente or a formal split between the USSR and Red China.

4. The independent path being followed by France under General DeGaulle is one among many other important and clear indicators that the unique power status and prestige of the United States within the free world is also being eroded. The fundamental bi-polarity of power in the overall post-World War II world also seems to be breaking down. The preservation and strengthening of NATO will undoubtedly remain a basic US goal, but we should consider, well in advance, the military implications of possible de facto changes in the basic orientation of any member nations.

5. The Army, furthermore, will have to ponder the fact that - with the growth of the modern concept of equal rights and equal freedom to act for all nations big or small - the medium and small countries are becoming quite uninhibited in the pursuit of nationalistic objectives with the result that there seems to be a growing tendency among the leaders of underdeveloped and newly independent nations to resort capriciously to military or para-military action in furtherance of their local objectives. This development appears to be encouraged in an unexpected way by the general acceptance and success of one of our basic US policies -- the deterrence of major open conflict. This increasing instability in large parts of the world, and the opportunities it offers for Communist exploitation, may well place very heavy new demands on the Army and require, during years to come, a greatly intensified consideration of the uses of US military power, to keep the peace or to protect law and order, in quite a number of areas and in situations of extreme political and psychological complexity.

6. In a world that seems to lose its bi-polarity - Sino-Soviet Bloc versus US-led Western Bloc - and where new separate power centers (e.g. Red China, France) appear to be on the rise, there could occur a considerable enlargement of grey areas, or vacuum areas, where indigenous as well as outside elements would struggle for influence and domination in a rather anarchical and explosive criss-cross pattern, leading ultimately in some cases to demands for US military presence on the local scene. Khrushchev's and Mao Tse Tung's well publicized intent to support "internal wars of independence" highlights the reality of this problem.

7. In addition to the political trends of the future, we must consider the impact of the fantastic advances of scientific and technological knowledge over the last fifty years and the application of

this knowledge and its techniques to military purposes. Not only have we witnessed during these years a remarkable growth in weapons effectiveness -- at least in the upper end of the spectrum of the conflict -- but also, as all are painfully aware, an almost comparable progression in costs to develop, produce, maintain and exploit such weaponry.

8. The speed of technological advance intensifies the long recognized, but never satisfactorily resolved, question as to the balance to be reached between resources used to buy currently modern material as against those used to develop and make ready for production still newer weapons and equipment.

9. These increasing complexities, arising from burgeoning technology, increasing costs and the need for balance in the application of resources, come into real and harsh focus when they are placed in the context of the world political, economic, and ideological trends discussed earlier. It is clear that the national security of the US cannot be founded on military force aimed for optimization only to meet the requirements of all-out, direct conflict with the Soviet Union. Our military capabilities must cover to some degree the entire spectrum of conflict from thermonuclear war down to and lesser than counterinsurgency. Equally clearly, a capability to support our national objectives throughout this entire spectrum cannot be undertaken by US forces alone, and we must look to an increasingly important share of the requirements to be met by friendly, allied forces, especially when conflicts fall more into the descending scale of the spectrum of conflict.

10. Because of the increasing application of advanced technology to military power in the instable and revolutionary world scene, it becomes more and more difficult to use experience from previous wars as the major basis for evaluations leading to solutions of the multiple problems involved in the future development of our armed forces. Scientific study techniques will, perforce, be used increasingly to aid experience and judgment in the complicated decisions required.

11. The above discussion of incipient "new world trends" makes it clear that the Army study program -- which is meant to support the entire Army system of planning, force development and programming -- must be increasingly broadly based and comprehensive in order to help prevent the emergence of gaps in our capability to meet a widening variety of potential tasks. Only a study program with a

broad perspective which does examine overall global, in addition to specific, political and technological developments, can provide the balanced general background picture that will put planners on guard against inflexibility and against committing too much of our resources to meet certain kinds of challenges while leaving too little for other potential challenges which are appearing gradually over the horizon. Only a widely ranged intensive study program could identify the concrete nature of such potential new challenges for the Army planners, who must pay full attention as well to maintaining an Army so balanced and flexible that it could fight our presumed major enemies at any level of direct confrontation.

12. One way in which the study program could help in identifying the proper mix and structure required for the fulfillment of existing as well as potential future Army tasks would be to base some of the study effort on analytical identifications of emerging trends and on realistic descriptions of a number of specific but hypothesized "conflict situations" that would be illustrative of situations that could occur during the coming years. These vehicles could then be used as "measuring rods" to test the appropriateness and comprehensiveness of studies used to support force development planning and programming.

13. The application of this general concept of using potential conflict situations as "measuring rods" would require the development of two documents:

a. First, a document entitled "The Forecast of Conflict Environment", which produced annually would serve as one of the chief input elements for strategic studies supporting the "Basic Army Strategic Estimate" (B SE). This long-range environmental forecast aimed about ten years in the future would be essentially an intelligence estimate of future trends and power relationships. It would present intelligence information, most of which is already available, in a systematic, condensed form, designed for ready use, and would outline as concretely and realistically as possible - on an area-by-area basis - the potential political, economic, social and military developments which might lead to situations requiring the use of US armed forces. The forecast would carefully set forth indications of possible changes in the quantity, quality or doctrine of the world's major military establishments. Particular attention would

have to be paid to actual or potential new trends in the utilization of scientific or technological advances for a sophisticated modernization of military and para-military forces.

b. Second, also produced annually - as a derivative from The Forecast of Conflict Environment, BASE and other sources - would be a series of up to ten hypothetical potential "Conflict Situations", each selected to represent a different, but characteristic "type" within the wide spectrum of possible conflict. Each "Conflict Situation" would be set in a time frame of six or so years in the future, and would describe in some detail such "elements" (military, political, economic, psychological) of the hypothetical situation as are traditionally taken into account by the staffs preparing, in a more immediate time frame, specific contingency plans. Each of these situations would be set to take place on a selected real terrain, under real local climatological conditions and with "real" power centers involved. Each would hypothesize the general background and political situation leading to the conflict as well as US, and Allied, political objectives and thus, the definition of the political restraints on the use of our military power. Indigenous and other allied friendly forces presumed to be available, allied command and logistical arrangements and other Allied military features would be described. For the hypothesized enemy side, intelligence information should be used to develop, with maximum projected realism, the enemy objectives in the particular situation, the size, doctrine, tactics, capabilities, and vulnerabilities of his military and para-military forces and the extent of their technological-military sophistication.



SECTION 5
of
THE ARMY STUDY SYSTEM
Basic Organizational
Considerations

SECTION 5

BASIC ORGANIZATIONAL CONSIDERATIONS

1. The findings and conclusions reached in this study derive from an analysis in depth of the current Army study systems and the many problem areas outlined in Section 1 of this report. Scores of officers and civilian professionals have been interviewed, both those at key levels and, with their permission, even more at the working levels. Numerous briefings on the study efforts of major Staff agencies and commands were provided and in these the question and discussion periods were aimed at clarifying the actual and potential contributions of studies to planning, programming and decision-making. Discussions were held with representatives of both in-house and contract operations research organizations and of planning and analytical elements in Industry. Other discussions took place with representatives of the DOD, the DA Secretariat and the Navy and Air Force.

2. From these discussions and from additional study and analysis, certain basic considerations were arrived at which have governed the more detailed conclusions and recommendations which follow later in this report. A brief statement of these basic considerations follows in the succeeding paragraphs.

3. Study programs should remain as decentralized as feasible although a better system for providing guidance and overall integration of the study effort appears necessary. Marked improvement in the responsiveness and utility of our study effort can be attained through the establishment of certain mechanisms for the better coordination and integration of special studies into our overall staff system. Broad and flexible coordination and procedures to induce a better flow of information among Army agencies on current and past studies can effectively reduce unnecessary duplication of effort and make the study effort more efficient and more timely.

4. Any changes in the current system should be evolutionary. The load on the Staff of the current tempo and scope of studies already underway, both those directed from higher authority or initiated in-house, is such that change should be introduced in a progressive way with the understanding that the incremental improvements in the system will not necessarily be fully operative under the new concept for some extended period.

5. An improved study system should require no important reorganization. The changes contemplated could and should be based on the current organization and assigned missions, requiring only certain changes in procedures and emphasis for their implementation. More substantive changes in planning and programming procedures are beyond the scope of this study.

6. The study system should be more clearly oriented towards providing inputs to the Army planning cycle. It appears that a preponderant number of current major studies derive from plans instead of providing input to plans and are oriented primarily towards assisting in intermediate or Staff agency decisions. This current orientation is not incompatible with an increased use of studies to provide better inputs directly into the planning and broad programming processes. Increased orientation towards planning would also highlight the essentiality of a certain number of new studies, examining problems more comprehensive than those clearly encompassed in specific Army roles and missions. Only through this very broad approach can proper evaluations be made of the optimized requirements for conduct of these roles and missions.

7. The study system will profit by a better organized and universally applicable procedure for handling intelligence projections of potential conflict situations and enemy capabilities. Currently there are no common procedures for applying realistic long-range intelligence to separate studies. Because of this there is a tendency to introduce intelligence projections differently into different studies, using different degrees of emphasis, and different situations. This results in a lack of comparability between the conclusions of one study as against another and makes the integration of studies more difficult.

8. The principle of net evaluations (US vs potential enemy) is a realistic testing device to enhance the validity of many studies and should be made more generally applicable. This is an outgrowth from the previous point. The more advanced technique of gaming US development - our action - enemy reaction - US second reaction, etc., could also be more often applied.

9. Any improved system should aim at decreasing the ratio of manpower and effort required to results obtained. By better methodology, emphasis and assignment of responsibilities and better

procedures for the review and utilization of completed studies, it should be possible to use currently diffused manpower and effort more effectively to support the improved studies system. More and better education in the theory and techniques of modern study methods and their application is indicated.

10. Avoidance of duplication in the study effort should be achieved primarily by emphasizing the requirement for initiators or sponsors fully to think through and coordinate the initial descriptions of the subject, scope and method of a study rather than by attempting to control duplication by higher authority. Today there are only informal requirements for agencies initiating studies fully to research what has already been done on the subject involved. In the case of directed studies, liaison with the original initiators is frequently imperfect. Better determinations of source material already available and early clarification of the objectives of a study may permit more studies to be done by staff analysis of previous studies with appropriate updating inputs.

11. Agencies initiating studies could often spend greater time and effort in defining and coordinating the statement of the problem to be studied. There are indications that insufficient analysis of a problem area leads, in some cases, to wrongly oriented studies or the failure to include all pertinent considerations in the study. By the same token, studies frequently fail to provide useful information to other Staff agencies which could have easily been obtained had sufficient coordination in the definition of the problem area been conducted initially.

12. Within all segments of the Army's study system greater emphasis should be placed on integrating the potentials of science and technology with military professionalism. In the "study" environment, this problem is not simply to get a maximum contribution to military thought from the scientific disciplines. The problem is much more sophisticated and entails mutual understanding and respect, a free flow of information and feed-back between all concerned. In many cases, humanistic as well as scientific disciplines need be involved to reach realistic conclusions. One important contribution in this area will be better and more extensive education and training in operations research and allied subjects of professional military personnel at all levels.



SECTION 6
of
THE ARMY STUDY SYSTEM
Correlation with the
Army Secretariat,
Office of the
Secretary of Defense
and other Outside Agencies

SECTION 6

CORRELATION WITH THE ARMY SECRETARIAT, THE OFFICE OF THE SECRETARY OF DEFENSE AND OTHER OUTSIDE AGENCIES

1. An important factor to be considered in improving the responsiveness of the Army study effort is that of liaison with the Army Secretariat, the Office of the Secretary of Defense and other outside agencies which develop study requirements for the Army to undertake. Current arrangements for continuing liaison with these organizations have no focal point, are not as effective as they might be and in consequence there has been considerable lost motion and unresponsive effort in the past.

2. Improvements in the effectiveness and timeliness of Army responses to OSD study requirements will not be easy to achieve for several reasons. One of these is the fact that there is as yet only a beginning in the erection of the liaison mechanism to enable prior planning, consultation and coordination of the Army initiated study program with the study programs and directed study requirements developed within the Department of Defense. So far there is no well known focal point within the Army Staff to act as part of this mechanism. Another reason is the lack of centralized, readily available and comprehensive information at the Department of the Army level on Army study programs and, more specifically, what Army studies bearing on problem areas of concern to DOD are currently underway or have recently been completed. Finally, there are no uniformly applied procedures for insuring that a study, undertaken in response to a DOD requirement, is kept properly and continuously oriented towards the DOD objective as the study proceeds.

3. There has recently been established in the Army Secretariat the position of "Special Assistant for Operations Research," under the Assistant Secretary of the Army (FM). This position, now held by Dr. Wilbur Payne, will be a most useful focal point for top level liaison on operations research studies between the Army Secretariat, the OSD and the Army Staff. Because of the decentralization and ramifications of the overall study systems within the Army Staff and commands, however, there is a remaining requirement to clarify and improve liaison within the Army Staff and commands as well as with the Army Secretariat and OSD.

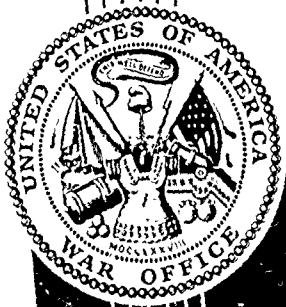
4. There are two specific examples where improvements in liaison with the OSD would be profitable. One is in the checking and clarification of the intent and scope of a problem to be studied in response to a directive from the Secretary of Defense. It has generally been true in the recent past that OSD directives to the Army requiring special studies have included a last paragraph which enjoined direct contact with a specific office in OSD to work out clearer mutual understanding of the objective, scope, techniques and procedures desired in conducting the directed study. Unfortunately this type of invitation has only infrequently been made use of, and in some cases failure to do so has led to the later invalidation of considerable Army effort. Early discussion with OSD, on the other hand, can not only lead to well oriented action from the beginning but also may effect some reorientation of specific OSD directives to fit them better into the Army resources available and the use of previous or parallel Army studies. The net result of a greater exchange of information in the early stages of a study should be a more responsive and valid Army effort benefiting both the Army and OSD.

5. The other specific area for improvement is in regard to the continuing, direct interchange of information as a specific study proceeds. OSD can often help in establishing valid assumptions on planning factors involving the other Services, confirming the acceptability of context and techniques being followed in the study, and bringing to the Steering Group or sponsor of the study up-to-date changes in the dynamics of the situation affecting the purpose and objectives of the study. All of these can also help to make the studies more valid and helpful to both the OSD and Army.

6. The immediate and simple first action to be taken to help improve this area of the Army study effort is to establish, preferably in the Office of the Chief of Staff a focal point for general liaison with the OSD and Army Secretariat charged with active responsibilities to see to it that appropriate steps are taken in the areas covered in the two paragraphs immediately above and to facilitate direct liaison in the case of a specific study between the sponsoring Army Staff agency and the element in OSD which initiated the directive on the study.

7. Many broad studies conducted by the Army require either authoritative inputs from the other Services or in some cases from

other outside agencies such as the State Department, CIA, DIA, and others. Without such authoritative inputs the validity of a whole study may be cast in doubt. There are various procedures for obtaining such inputs and the precise procedure to be used in any particular case can be tailored to the precise requirement. Where such inputs are not available it may be necessary to assume or hypothecate them. In such cases the OSD can often be helpful in providing assumptions or in checking their validity. In any event aggressive and effective liaison is indispensable.



SECTION 7
of
THE ARMY STUDY SYSTEM
Education in the Techniques
and Use of Studies

SECTION 7

EDUCATION IN THE TECHNIQUES AND USE OF STUDIES

1. The field of education and training is a separable area which requires considerably more attention in order to improve the basis for the Army's conduct and use of studies. Examination of the situation within the Army indicates clearly that the Army has lagged far behind the Navy and the Air Force in the emphasis and action given to the educating and training of its officers both in the techniques of modern study and in the utilization of such studies. It has been only within the last few years that specific activity has been generated to improve the status of education in operations research and allied study techniques. There is, however, still room for more understanding and help from the higher levels of the Army on the need for increased emphasis in education and training.

2. The importance of this subject is clear. As discussed in earlier sections of this report the use of sophisticated studies in the development of optimized armed forces to meet the challenges of the future is becoming increasingly necessary. The application of modern study techniques is here to stay. To ignore this fact is tantamount to a failure to recognize that the impressive advance in science and technology is equally as applicable in the analysis and study of future problems as it is in the more concrete developments in advanced weaponry and other material.

3. More education and training is needed in two ways. The first and more obvious is the need to have within the Army a hard core of expertise in an adequate number of officers and professional civilians who have received graduate education, advanced training and experience in the techniques and utilizations of advanced studies. The second is a less recognized need for practically all senior officers whether in command or staff positions and a majority of intermediate staff officers to know sufficient about the modern techniques and uses of studies that they may employ these tools to maximum advantage without over estimating or under estimating their utility and applicability.

4. The Navy was the first Service to recognize the importance of educating and training its officers in modern study methods. It has

had a well organized and integrated program for higher education and training of its personnel operating over many years. The results are manifest in the better acceptance and utilization of Navy study efforts within the overall Department of Defense planning, programming and budgetary processes. The Air Force also recognized the value of education some time ago and has made major strides in providing a steady flow of educated and experienced personnel into its officer corps. Army efforts to grapple with this subject were initially haphazard and relatively ineffective. Within the last few years the importance of the matter has been more clearly recognized, but this recognition is still largely confined within the areas immediately or technically concerned with the conduct and application of operations research studies.

5. The Operations Research Technical Assistance Group (ORTAG) under the Army Research Office has been studying the problem in the recent past. There are only 12 officers in the active Army today with advanced operations research education and training. The problem is receiving greater attention within the Office of Personnel Operations and Office of the Deputy Chief of Staff for Personnel as part of the overall programming for the higher education of Army officers. However, an adequately energetic approach to the problem has been inhibited by the general approach with regard to education which has been to determine broad educational requirements primarily on the basis of specifically identified upcoming requirements in the active Army. Since even these specific requirements for this type of education and training have not been clearly identified in the past, the danger of running in a vicious circle was arising. DCSPER, however, in action recently to examine the overall subject of higher education, set a requirement for 17 officers to be given higher education in operations research at a time. After five or six years this quota should provide 84 additional operations research specialists. There is currently no MOS or prefix for an operations research trained officer. Use of the Termatrix card retrieval system within OPO can be of some help in the identification when specifically required, of officers who have had formal higher education in operations research. The basic problem remains the fact that the Army has not yet fully recognized the trend to use studies more and more as an integral part of its and DOD's planning, programming and budget justification system. In consequence, the development of educational requirements primarily on the basis of currently established positions identified as requiring such education

is failing to build towards the trend of the future and to overcome the deficiencies of the past. Additional to the graduate education needed, greater attention should also be given to on-the-job training of selected officers by assigning them to in-house and contract operations research institutions to do substantive work in the field.

6. It is interesting that tri-Service examination of the problem of education and training in study techniques appears to be moving ahead faster than the Army's own actions. Considerable active study on the matter is being conducted under the aegis of the Military Operations Research Symposium (MORS), a tri-Service, informal group sponsored by the Office of Naval Research. It is administered by the Naval Analysis Group with the chief of NAG acting as its Executive Secretary. MORS has a number of committees or working groups who meet to examine, clarify and exchange ideas on major identifiable problem areas. One of these committees is entitled The Working Group on Education in Operations Research for Military Personnel. It meets from time to time and is actively examining the overall subject matter. Through continued Army representation on this group, we can expect to get many useful ideas from the interchange of information with the other Services.

7. Within the Army itself there are, as was earlier mentioned, two broad aspects to the problem. The first is the need for advancement in the education, training and accumulation of experience for individual officers who can then build up an "in-house" expertise and capability to work upon specific major study projects or to work intimately with civilian experts in the field. These officers will play an increasingly important role over future years in the improvement of the effectiveness and validity of the overall Army study system. Today there are far fewer officers so trained and experienced than could usefully be employed. We need right now more officers who understand and can talk "the language" and thus, among other things, work more fruitfully with the elements in the Office of the Secretary of Defense who initiate and evaluate the studies directed by OSD to be performed by the Army in the R&D or programming areas. These officers, as they grow in rank and experience, can be highly useful as study coordinators and evaluators within the major Staff agencies and commands. They will make important contributions to decisions on what subjects need emphasis and can usefully be studied by modern techniques. They can be importantly helpful in the evaluation of

studies and in the application of their findings to the larger context of activities in the Department of Defense, Headquarters, Department of the Army and in major subordinate commands.

8. The second area for improvement in education is in the far more generalized but more broadly applicable need for senior commanders and staff officers to become sufficiently familiar with the capabilities and the shortcomings of modern study techniques to be able to use them to best advantage as tools to assist in the solution of specific problems or to aid in the decision-making process. Increasing recognition of this requirement is showing up in many ways, for example in the increasing number of articles in Army journals and periodicals which are bringing these matters to the attention of substantial numbers of the Army's officer corps. Ideally, it would be useful if the majority of staff officers within the Army General Staff had sufficient familiarity with advanced study techniques to feel thoroughly at home in the now esoteric language of the science. The problem here is not so much a problem of formal education as it is to develop, by in-house training and orientation, this better familiarity which can be so useful.



SECTION 8
of
THE ARMY STUDY SYSTEM
Areas for Improvement

SECTION 8

AREAS FOR IMPROVEMENT

1. Having found that the current Army study system is better than it often is attributed to be, and having noted that a great deal of internally developed improvements are continually taking place, nevertheless, it is important from the standpoint of healthy self-criticism to examine what are today its determinable deficiencies and thus try to identify areas for improvement.

2. The Army study system today suffers from inadequate integration into overall staff procedures, planning and programming. It would profit by better defined and commonly applicable strategic guidance and perspective. There is currently no comprehensive and clearcut organizational mechanism to recommend a balanced master study program assuring that areas that could profit by study on a timely basis are in fact being adequately covered, and to recommend as well on the relative degrees of emphasis and priority to be accorded study areas as a basis for the allocation of resources available for the conduct of studies. The Army Operations Research Steering Committee (AORSC), under the Chief of Research and Development, fulfills certain of these requirements but only with respect to the contracted part of the Army's operations research effort. The AORSC has been relatively effective within its scope but even it provides little insurance that certain areas which would profit by timely operations research studies are, in fact, recognized and given appropriate attention.

3. As an example of the slow recognition of an important area, one might ask as a "Monday morning Quarterback" why the Army had not placed long ago greater emphasis on studies and staff action on the general subject of counterinsurgency. Examination of the projected world situation as much as 10 or 15 years ago should, in theory, have indicated highly probable requirements for the Army to be able to operate effectively in this type of action. Timely identification of the problem area and appropriate staff activity in connection with counterinsurgency might well have permitted, over a far longer period of time in the past, a greater application of experience, technological progress, organizational changes, training, and other factors to the problem and thus have made us better prepared today to cope with this increasingly acute requirement.

4. Other indications of the need for procedures for earlier identification of "submerged" problem areas can be found in the increasing propensity -- or need -- to create major ad hoc study efforts to rectify earlier failures to identify and study problem areas through regular staff action and an integrated study program. The Howze Board, the Seaman Study and OREGON TRAIL are examples. While such ad hoc efforts are often necessary and are certainly effective, they are also somewhat disruptive to regular staff activities and suffer to a greater or lesser degree from their inevitable compartmentalization and separation from the overall "real-life" context of Defense decision-making. This separate approach to an important problem area may be essential in certain cases because it represents the best and sometimes the only means of attacking the problem and analyzing it within the time allowed. However, there is a trend to use this approach more and more frequently and this can be harmful. If overdone it results in the fragmentation of effort, the disruption of the regularly planned study programs and the creation of unpredicted demands on scarce personnel and other study resources. The ad hoc approach also requires excessive staff action to review, coordinate and integrate the study results in proper balance into overall priorities and programs and, finally, can result in too many of the basic long-range problems of the Army being approached, in effect, on a "project manager" basis without adequate final correlation.

5. It should be the aim of any revised study system to improve procedures for the early and timely identification of major potential problem areas, to insure that appropriate study effort is allocated to such areas, and to help keep appropriate balance within the overall study effort, both as regards subject matter and as between short-term and long-term effort.

6. Within this general area, there is need to pay greater attention to a better common understanding of and application of the terms "coordination" and "correlation" when applied to the study system. There are vast complexities in the overall Army study programs, both because of the many different types of studies and procedures involved and because of varied beliefs on the relative utility of studies and consequently of the objectives towards which they should be aimed.

7. A current example of somewhat belated recognition of the important inter-relationships between some studies is to be found

in the complex of real problems resulting from the abolition of the technical services as the result of the reorganization of the Army in 1962 and the planning to reorganize the Field Army logistical structure on a functional basis. Because we did not adequately correlate the initial studies in these areas we are now confronted with: (a) a series of secondary changes needed to fit the efficient peacetime management of posts, camps and stations into a functional or non-Technical Service basis; (b) unclarities as to how the CONUS peacetime assignment of logistical and technical officers will support the overseas assignment requirements; (c) the need for a large number of new functional MOS's and major changes in the curricula of Technical Service schools and; (d) a resultant unclarity and the possibility of drastic changes in career patterns and career incentives for highly specialized officers of the Technical Services. We are now involved in an urgent major effort to sort out and correlate these problems. The impact on the Army of the future of the imperfectly correlated actions in this area are yet to be determined but it is clear that early action is needed to insure that the young Technical Service officers can shortly be sure of career patterns which will provide motivation and incentive and make it worthwhile for them to continue to devote their careers to Army service.

8. One of the contributing factors to the difficulties in coordination just outlined arises from the fact that there is no common pattern as between the various general staff agencies in their own management and supervision of studies, in their methods for determining areas which require the initiation of studies, and in their understanding of the use of studies. As has been said, there appears to be a growing tendency to consider studies as something separate from and not part and parcel of the discharge of staff responsibilities. There are examples where highly useful studies, either directed from above or self-initiated, have been more or less forgotten by the balance of the staff after the initial presentation of their conclusions.

9. In most staff agencies there is no single focal point where there exists knowledge of all the major studies completed or underway under the general staff supervision of that staff agency. In obtaining, for this analysis of the Army study effort, a list of current major Army studies sponsored by each staff agency, it has been necessary for many of the agencies concerned to make a lengthy and extended internal search to produce a list of their own studies.

The situation varies within staff agencies and evidence of better recognition of the problem can be seen in the recent reorganization within DCSOPS to establish a Strategic Studies and War Games Division to carry out this function. In the same area, a summary sheet recently initiated by ACSFOR, entitled: 'Control and Coordination, Force Development Functional Study Area,' addressed major aspects of the same problem as seen by ACSFOR.

10. A major deficiency in the Army study effort today is the lack of any central information and retrieval center which keeps a current listing of major studies, completed or underway, related to the important areas of interest to the Army Staff, to include strategic, doctrinal and force development studies. There is a long recognized and urgent requirement to establish such an information center. Recommendations to establish such a center are included later in this report. In brief, it should catalog, store and disseminate information and, when required, provide abstracts and summaries from studies. It should aim eventually at providing a more complete retrieval service which would make available pertinent information from all major studies bearing on problems of concern to the Army Staff. The lack of this information center and service is a contributing factor to duplications in study effort and explains why some studies are conducted as new "special studies" when they might adequately have been handled as staff studies.

11. The Army has a need for education in modern techniques and use of studies which transcends the filling of formally identified operations research positions. Sect. 7 has expanded on this subject. There are two facets to the requirement. First, the Army needs to build a core of professional expertise for operations research as a major component of its military and civilian in-house study capability. Second, there is the need to develop a broader comprehension of the significance of modern study methods and their application to Army study problems. While specific recommendations are not included in this report, it is suggested that this is an important subject for study by the ASAC when it is established.



SECTION 9
of
THE ARMY STUDY SYSTEM
Basis for an Improved
Study System

SECTION 9

BASIS FOR AN IMPROVED STUDY SYSTEM

1. The discussion above has defined a number of areas where improvements in our Army study system are clearly desirable. It should have also shed some light on the compartmentalization and other conflicting factors which tend to make the current unintegrated systems more ponderous and less flexible and responsive than is desirable. Section 5 of this report has set forth certain basic considerations which should govern readjustments in the study system. Most of the remaining more specific requirements for an improved system can be treated in four main areas. The first of these major problem areas is how to effect improved coordination and better information flow. The next is the need for more orderly, formal and comprehensive procedure for determining what major studies should be initiated and their relative importance. The third is to find a better way to use intelligence estimates and forecasts as a basis to give increased strategic guidance for and comparability between study results. The fourth is to set forth clearer and more formalized principles and procedures for the initiation, conduct and use of major Army studies. There are obviously important interrelationships between and among solutions to be suggested in each of these areas.

2. In the succeeding paragraphs, there is outlined a basis for an improved study system. The elements of this system are designed to be mutually supporting and in the overall are aimed at meeting the four requirements outlined above.

3. Coordinating and information mechanism. This mechanism should consist essentially of three components: first, a high level "Army Study Advisory Committee" chaired by the Director of Special Studies from the Office of the Chief of Staff; second, a competent "Study Coordinator" in each Staff agency and major command, with such staff as the head of the agency deems necessary, charged with keeping abreast of the overall study effort, especially the study program of his own agency or command, and acting as the focal point in his agency for the flow and exchange of information; third, a cataloging, storage and information center to include a readily

accessible library of completed studies together with a mechanism for the retrieval of information from these studies. The entire coordinating and information mechanism rests on a concept of optimum decentralization, but provides a formal device which can step in, formally or informally, to pull things together whenever overall synthesis or coordination is required.

4. This coordinating mechanism would provide easily identifiable foci throughout the staff and commands for the flow of information on studies through an informal "technical" channel. It would provide a senior advisory committee which can be used flexibly to review any or all problems relating to the overall study effort which are deemed appropriate to be brought to its attention. The committee could effect general coordination as required, coordinate the development of a master study program and fit into this a program for contract operations research studies, advise on the initiation of important new studies or directed studies and fit them into the overall program, and aid in the resolution of conflicts arising from differing views as to the importance of studies and the competition for resources among them. It could recommend on special or unanticipated problems bearing on the study effort as a whole, for example, the problem of training and education in operations research techniques, and it could assist as desired in insuring the proper follow-up of study results and their integration into overall Army Staff planning and action. The value of the Army Study Advisory Committee could best be exploited if, after an initial period of activity involving further review of existing study procedures, it is used sparingly and flexibly and assigned special missions or tasks only when it becomes apparent that no other staff mechanism can be utilized more effectively. The study information and retrieval center would provide a long needed service, would make immediately available to the Army Staff and the study system as a whole useable information on past and current studies and would appreciably enhance the continuity of study effort.

5. Development of a master study program. For the many reasons discussed earlier in this report, the ability to "surface" areas requiring study on a timely basis has proved in the past to be difficult and a deficiency in the earlier Army study effort. No methodical and comprehensive procedure has existed for reviewing future world trends and potential situations, and from this analysis, arriving at considered programs for basic studies better designed to avoid gaps or erroneous emphasis in the effort and to provide needed

basic background inputs to broad studies supporting plans as well as to more specific studies. The study programs of the past have been somewhat heterogenous, and the individual studies conducted therein have been initiated on a somewhat hit-or-miss basis. Major progress towards resolution of this problem has been made in the recent period but more can be done. Obviously, no system can expect a perfect batting average in this regard but a more deliberate approach involving greater use of intelligence and technological inputs, more methodical analysis and a greater interplay of the separate staff and command points of view should aid substantially in achieving further progress. This problem will, of course, always require a close working relationship with the Office of the Secretary of Defense because of its overriding integrating authority and interests.

6. The Army's basic study program must not only be comprehensive from the Army's viewpoint but also be flexible enough to fit within the broader programs of the DOD. It must respond to and accommodate studies directed from above and fit them most effectively into the overall program. This latter point requires aggressive liaison with the initiating agencies, most frequently those in the OSD, which require studies from the Army. The coordination and information mechanism described in the previous paragraphs is designed to provide a means for the better review and coordination of the initiation of Army studies and for better liaison with the Army Secretariat and DOD. The Army Study Advisory Committee will provide an overall monitorship of the study effort, help determine gaps or inconsistencies in the decentralized segments of the study system, and as necessary, advise on how to rectify identified problems.

7. Better use of intelligence forecasts. One of the most vexacious problems encountered at all levels of the defense establishment is how best to evaluate one study against other pertinent studies to assist in the planning and decision-making process. The problem is magnified many fold by the current lack of comparability among the basic assumptions and environmental backgrounds on which individual studies are based. To use an unfairly simplified hypothetical example, if a study on the optimum organization of ground forces in the future were based solely on the anticipated use of the organization in a sophisticated war in Europe, while a study on the utility of air mobile forces were based primarily on their use in a sub-limited war

in an unsophisticated environment, it is clear that the decision on the relative resources to be put into the implementation of each concept will still require further complex deduction. Real life problems and inter-relationships encountered are far more complex than this hypothecated example, but it serves to highlight the need to do all possible to find a basis for the better comparability of study results. The solution suggested herein is to provide more useable, common inputs of intelligence forecasts to be linked with the input from the more normal national security, strategic and technological forecasts. Two separate but related documents are envisaged: First, a fairly long-range "Forecast of Potential Conflict Environments" and second, in the mid-range, a selected battery of realistic but hypothetical future situations called the "Rainbow Scenarios". The use of intelligence forecasts and hypothetical scenarios has been common practice for many years. A trouble has been, however, that the basic forecasts, the basic scenarios and sometimes even the basic assumptions used have varied from study to study and have normally been created afresh for new study. Hence, there has been no common basis for comparability by which the decision-maker can synthesize and evaluate the results of separate studies which have a bearing on his decision. The use of common backgrounds would not only increase the ultimate utility of Army studies, but, if so desired, would provide real assistance in the more fundamental processes of planning and programming. It is true that there might be some dangers in the suggested approach, the most important of which is the possibility that the main drive of our future force development might tend to become more reactive to hypothecated situations and less free to maintain the basic integrity of its drive forward. This danger, however, can be avoided by an intelligent and understanding use of the common documents.

8. The common application of the Rainbow Scenarios would have several advantages. For example, their selected use can be "weighted" to give a better evaluation of many general and specific developmental and programming objectives. The fundamental paradox which confronts us in developing the Army of the future is, as was earlier stated, the probability that the least likely actual use of the U.S. Army in the mid-range future may be in a major sophisticated war and that lesser actions in less sophisticated environments will be more likely, but this will remain true only so long as the Army is continuously modernized and maintained to the degree that it can play its necessary full part in the effective conduct of a major war. Because of the contradictions implicit in this paradox it is extremely

difficult to strike the proper balance in force development. A specific example of the type of complicated decision continuously required is that involved in determining what proportion of Army fighting vehicles for the future should be "general purpose" as against "special purpose". Again by illustrative over-simplification, by evaluating the utility of the Armored Infantry Fighting Vehicle not only against the scenario of a sophisticated war, say, in Europe but, additionally, relating it to varying scales of unsophisticated war laid on the actual terrain of South America, Africa and SE Asia, it would be possible to apply a considered "weighting" factor based on the relative importance of and probabilities of the respective "test" situations. This approach in turn would permit the analytical processes to be used as a broader tool and to provide a clearer definition of the elements on which judgment must finally be applied to determine the overall requirements and basis of issue for such a general versus special vehicle versus other-purpose vehicles.

9. Improved principles and procedures for the initiation, conduct and use of studies. One facet of this problem area has been touched on in the above discussion of the better use of intelligence forecasts. The problem, however, is much wider than this one facet. For instance, a better flow of information with regard to the initiation of new studies should enable, in many cases, minor revisions to be made in the statement of the problem to be studied so as to make the study more useful to staff agencies other than the sponsoring agency. Better knowledge of previous studies and the ability rapidly and easily to find them and use them can have a significant impact on the type and technique of study effort to be chosen in pursuing the assigned problem. In a more substantive sense, the building up of a conscious continuity of effort in the progressive analysis of fundamental policy and strategy problems can obviate much lost motion and provide a more timely responsiveness to new examinations of the subject. Most importantly, the establishment of more formalized and generally applicable principles and procedures can simplify and facilitate the integration of study results into the "real-life" context of broader staff and decision actions. Finally, clearer procedures applying to the high level review and follow-up of study results will guard against "one-shot" or compartmentalized applications of specific special studies.

10. Each of the four problem areas briefly discussed above is expanded upon in the following sub-sections and where appropriate detailed suggestions for action are included.

SUB-SECTION 9a

ORGANIZATIONAL ASPECTS

1. Draft terms of reference for the main elements of the organizational structure for coordinating the Army study effort are included in the following paragraphs. They constitute expansions on previous discussion, and are more definitive statements of the function of each, and of the relationships between the study system and the existing staff and command structure. It is reiterated that the study coordination system is envisioned as a means for improving on the effectiveness of Army study, not by alternating staff or command responsibilities but by facilitating internal Army coordination of and exchange of information on the study effort and by identifying promptly those problems which might delay or result in misdirection of the study effort. Terms of reference along the lines of those which follow should be published initially as Chief of Staff Regulations (CSR) within the Army Staff.

2. Changed Terms of Reference for the Director of Special Studies, Office of the Chief of Staff, U.S. Army:

a. Recession. The following changed terms of reference supersede the terms of reference for the Director of Special Studies, OCS, US Army, set forth in CS 321 DSS (15 Aug 1963). This changed terms of reference becomes effective on or about _____.

b. Mission. The Director of Special Studies is the principal advisor within the Office of the Chief of Staff, US Army, on matters pertaining to the Army's major special study program and the Army study system. He is the Chairman of the Army Study Advisory Committee. He will personally monitor, review and make appropriate recommendations to the Vice Chief of Staff concerning matters of major importance affecting the Army's special study program and Army study system. He will maintain up-to-date information on the status of major studies and on study facilities and resources.

c. Organization. The Director of Special Studies will be a senior Army general officer designated by the Chief of Staff. He will be assisted by a small professional staff of military and civilian professionals well versed in operations research and other study techniques

and representative of military and scientific disciplines, and appropriate secretarial and office assistance. He will be provided administrative support, to include office space, by the Secretary of the General Staff.

d. Relationships. The Director of Special Studies will be under the direct supervision of the Vice Chief of Staff, and will be responsive to the requirements of the Secretary of the Army, Chief of Staff, Vice Chief of Staff and the heads of major Army Staff agencies and major commands. He will have no directive authority over elements of the Army Staff or subordinate commands. He will be expected to work closely with all Staff elements and appropriate commands within his terms of reference. He will be the general liaison officer on matters pertaining to the Army study system with the Secretariat of the Army, the Office of the Secretary of Defense, the other Services and other outside principal governmental agencies.

e. Procedures:

(1) As Chairman of the Army Study Advisory Committee, the Director of Special Studies will be responsible for the flexible and effective operation of the committee in the conduct of its missions as outlined in its terms of reference, bearing in mind that the function of the Army Study Advisory Committee is not to separate or compartmentalize the Army Study system from other functions of staff action but, rather, to integrate the study effort into a more effective element of overall Staff operations.

(2) The Director of Special Studies will maintain a continuous monitorship of the study sub-programs involved in the overall Army major special study program and call to the attention of Staff agency chiefs any detectable gaps or major errors in emphasis which appear from the review of the overall program.

(3) In connection with the mission of integrating directed or in-house major new studies into the overall program the following procedures will be followed:

(a) Upon indication, through his function as general liaison officer with superior headquarters on study matters, that new study requirements are being initiated in the Army Secretariat or in the Office of the Secretary of Defense, the Director of Special Studies will take such steps as are proper and desirable to keep the initiating

outside agency informed on the scope and direction of current Army Staff actions to include studies bearing on the matter under discussion. He will act in this capacity in consultation with or utilizing the appropriate functionaries in the Secretariat of the Army. The purpose of this preliminary liaison will be to bring the proposed study directive as closely as seems feasible into relation with current Army study efforts and activities.

(b) Upon receipt of a formal study directive from higher headquarters, the Secretary of the General Staff will provide the Director of Special Studies with an information copy while he furnishes the action copy to a major Staff agency decided upon in consultation with the Director of Special Studies. The chief of the major Staff agency concerned, hereafter called the sponsoring agency, will take the appropriate initial action as required in the directive from higher headquarters and as required by the standard operating procedures for the initiation of studies set forth in sub-section (d). The Army Study Advisory Committee or the Army Study Advisory Committee Working Group can be used to assist in this initial staffing to the extent desired by the chief of the sponsoring agency.

(c) When the initial staffing of the proposed directed study has been completed the action paper thereon will be, depending on the magnitude and importance of the study, referred to the Director of Special Studies for consideration by the Army Study Advisory Committee or its Working Group. The ASAC shall formally or informally take the necessary action to insure proper coordination and integration of the new study into the master study program.

(d) The same procedures will be followed for the initiation of major new studies proposed by the Chief of Staff or Vice Chief of Staff or those being recommended by a major Staff agency or command.

f. In functioning as the general liaison officer with the Office of the Secretary of Defense and other outside agencies in regard to the Army Study System, the Director of Special Studies will work in close consultation with or through the Special Assistant for Operations Research in the Office of the Assistant Secretary of the Army (FM) or other appropriate offices in the Army Secretariat. He will keep the principal Staff agencies concerned up-to-date on information received in the liaison function. As soon as any specific problem area becomes clearly enough defined in the minds of potential

initiators of directed studies in higher or outside headquarters, the Director of Special Studies will act to bring the principal interested Army Staff agency into contact with the outside agency concerned in order that more direct and detailed liaison and exchange of ideas can take place.

g. The Director of Special Studies will generally monitor, for the Office Chief of Staff, the establishment and operation of the Study Documentation Information and Retrieval Center set up to assist in the conduct of the Army major special study program.

3. Terms of Reference for the Army Study Advisory Committee.

a. Establishment. The Army Study Advisory Committee (ASAC) is established as a Headquarters, Department of the Army Standing Committee effective on or about _____.

b. Mission. Annually the ASAC will develop a master program of major special studies together with priorities of importance of the studies listed. Initially the master study program will be composed from sub-study programs coordinated and recommended by the major Staff agencies charged with the development of the sub-study programs. DCSOPS will be responsible for developing the sub-study program in "strategic studies". ACSFOR will be responsible for the sub-study programs in "force development and training studies". DCSLOG will be responsible for the development of the sub-study program in "major logistical studies". DCSPER will be responsible for the sub-study program in "major personnel and manpower studies". COA will be responsible for the sub-study program in "management studies". CRD will be responsible for the sub-study program of major studies directed toward integration of science and technology into the development of the Army.

c. The ASAC will be responsible for integrating into the annual master special study program each new directed study requested from the Army by the Army Secretariat or higher headquarters to include the Office of the Secretary of Defense. The ASAC will also be responsible for integrating into the master study program important new studies directed by the Chief of Staff or outside authoritative sources, or recommended by any major Army Staff agency or command.

d. The ASAC will serve as the principal coordinating and monitoring agency in the Army Staff for the coordination and resolution of important problems arising with regard to the Army study system when and if these problems cannot be resolved by ordinary staff procedures.

e. The ASAC will act, when required by the Chief of Staff or Vice Chief of Staff or requested by a major Staff agency, to integrate results of major studies or to follow-up on the synthesized body of study results.

f. Organization. The ASAC will be composed of representatives at general officer level of all major Staff agencies in the Army Staff, major commands, and the Director of Special Studies, Office Chief of Staff, who shall act as chairman of the committee. The "Study Coordinator" of each major Staff agency and command will, if of general officer rank, be the agency representative on the ASAC. If the "Study Coordinator" is not of general officer rank he shall act as alternate representative for his agency on the ASAC. The Staff in the Office of the Director of Special Studies, Office of the Chief of Staff, shall act as the principal staff of the ASAC. A member of this staff will be designated as the "Secretary of the ASAC".

g. Relationships. The ASAC will act only as an advisory body, responsive to the requirements of the Chief of Staff, Vice Chief of Staff, and the chiefs of the principal Army Staff agencies and the commanders of major commands. It will have no directive authority over elements of the Army Staff or major commands.

h. Procedures. Initially, the ASAC will meet at the call of the chairman whenever he deems it necessary. After initial meetings to clarify detailed procedures and methods of operation, the ASAC will meet at least semi-annually and additionally only when confronted with major tasks.

i. The ASAC "alternates" will meet as a Working Group at the call of the Secretary of the ASAC. Initially the ASAC Working Group may meet frequently on minor matters involving the clarification of procedures and operations. Thereafter it will normally meet on urgent minor problems not deemed to require the attention of the formal ASAC.

j. An annual meeting or meetings of the ASAC will be conducted to finalize the development of the Army master special studies program.

k. Another annual series of meetings of the ASAC will be conducted for the purpose of performing the functions with regard to the Army Operations Research study program which are currently performed by the Army Operations Research Steering Committee. At this series of meetings the Chief, Army Research Office of the Office of the Chief of Research and Development will act as working chairman to conduct the business involved in establishing the operations research contract program.

l. Upon receipt of a directive for a new major special study from the Secretariat of the Army or from the Office of the Secretary of Defense or other superior headquarters, this directive will be sent to the Director of Special Studies, OCS, and distributed to the major Staff agencies involved. The Director of Special Studies, in consultation as necessary with the Staff Agency Study Coordinators, will make a recommendation to the Secretary of the General Staff as to the Staff agency of primary interest. The Staff agency of primary interest will then be requested to develop, in accordance with procedures established by separate instruction, the recommended statement of the problem, assumptions to govern the study, and the study agency, techniques and study methods to be utilized in carrying out the directive from superior headquarters. When this preliminary staff work has been completed, the sponsoring Staff agency will inform the Director of Special Studies and if desired by the chief of the sponsoring Staff agency or if directed by the Chief of Staff, will refer the proposed study directive to the ASAC for coordination, confirmation of priority and integration into the Army's master special study program.

4. Terms of Reference for "Study Coordinator" in each of the Army Staff Agencies and Major Commands:

a. Establishment. The position of Study Coordinator is established in each office of all Army Staff agencies and major commands, effective on or about _____.

b. Mission. The Study Coordinator will maintain continuously information on the status of all major studies, completed within the past two calendar years or currently being conducted, which his agency has sponsored or otherwise given primary responsibility to conduct. Similar information will be maintained on the study resources and capabilities of his agency. He will act as the principal contact point within his agency to coordinate functions pertaining to the overall Army study program, and to facilitate the maximum useful informal exchange of information on current or projected studies of possible interest to other agencies or his own agency. He will maintain active liaison with the Study Coordinators of other Staff agencies and commands as necessary to facilitate this informal flow of information. He will be the principal staff advisor to the chief of his Staff agency or to his commander on matters pertaining to the Army study system. In this regard he will review the adequacy with which the principles and procedures for the origination, conduct and use of special studies are applied within the agency. He will act as his agency's alternate representative on the Army Study Advisory Committee and as such will be a member of the Working Group of the Army Study Advisory Committee. If he is of general officer rank he will be the agency's member, rather than alternate, on the Army Study Advisory Committee.

c. Organization. The Study Coordinator will be of a rank commensurate with the scope and magnitude of the special study effort within his specific agency or command. He will be given such staff and administrative subordinates as are deemed necessary by the chief of the Staff agency or commander concerned. He may be given such additional duties as the chief of his Staff agency or his commander may deem proper.

d. Relationships. For his primary function, the Study Coordinator will be placed immediately under the top echelon of his agency or command. He will be expected to work closely with all subordinate staff or command elements within his terms of reference. Unless so desired by his chief or commander, he will have no directive authority over the subordinate elements of his agency or command. He will be part of a "technical channel" for the interchange of information on the overall Army study program, and as such will maintain aggressive liaison with the Director of Special Studies, Office Chief of Staff, and other Study Coordinators. He will represent his agency or command on the Army Study Advisory Committee in the absence of his principal and will represent his agency on the Army Study Advisory Committee Working Group.

e. Procedures. The procedures by which the Study Coordinator will carry out the missions assigned above will be as determined by the chief of his Staff agency or his commander. He will not be expected, at least initially, to be involved in the substantive conduct of studies sponsored by his agency or command. However, to the extent feasible, he should be an officer well versed in, educated and trained in operations research and allied study techniques and as such should be useful as an advisor to the action officers charged directly with staff action on studies in progress under the sponsorship of his agency or command.

SUB-SECTION 9b

A STUDY DOCUMENTATION AND RETRIEVAL CENTER

1. An important aspect of the effectiveness of the Army major study effort is the retrieval of completed studies, both for use as aids to new studies and to permit broad analysis and review of study programs. Present arrangements for the collection and retrieval of study information are those which have been made for use within study sub-programs such as the Logistic Study Program of Army Materiel Command; they generally are designed to meet the needs of each sub-program and vary in nature from one sub-program to another. There is no common system for collection and dissemination of Army-wide study information on major studies. This lack of a common system has its greatest impact in Headquarters, Department of the Army where the need for rapid retrieval of major studies is most frequent, and where the potential benefits of previous studies can be realized in terms of decreased duplication of study effort and a sounder basis for decisions on the type and size of study organization needed to meet a new study requirement.

2. The basic need is for an austere study information system which will serve the Army Staff with speedy search and retrieval of previous major studies as required, and which could also serve other Army agencies located in the Washington area. Additionally, a periodic bibliography of major Army studies would constitute a common basis for the improved use of such studies Army-wide. A growth potential and the flexibility to mesh with the sub-systems already in existence is desirable so as to allow for future growth in the number of studies and in the services performed. The usefulness of a study information system should be obtained without infringing upon the functions and prerogatives of Staff and command agencies.

3. The investigation of alternative organizational and physical structures for study information systems as covered in Annex C of this report has led to the conclusion that the Army Library, supported by the Data Services and Administrative Systems Command, under The Adjutant General, is best equipped by present function, personnel qualifications, and equipment as the site for an austere Army Study Documentation and Information Retrieval System (ASDIRS). A small special study section can be established speedily as an adjunct of the Army Library, under the general monitorship of the Director of

Special Studies, Office of the Chief of Staff, where bibliographic data on major Army studies can be assembled, collated and disseminated, to provide quick retrieval services and eventually copies of studies for reference. The study section of the library can also produce, in conjunction with the storage and machine printing capability of Data Services and Administrative Systems Command, periodic bibliographies for Army-wide distribution which will contain bibliographic data and abstracts of major Army studies completed and in process.

4. The usefulness of an Army study information system will be best preserved if it is restricted to studies of significant importance to Headquarters, Department of the Army and does not attempt to duplicate established facilities for large volumes of data such as the Defense Documentation Center, or other information centers which have been established or may be established for specific categories of scientific and technical data. Further, an attempt to include all Army studies would produce a cumbersome system which would not be responsive to the needs of various users, and would be a burden upon those commands and Staff agencies which have already established study information systems to meet internal needs. However, in order for the information available for use in Headquarters, Department of the Army to be sufficiently comprehensive to permit overall evaluation and review of broad study areas and to permit maximum use of previous studies, it is necessary that inputs to the study information system include "major Army Studies" from throughout the Army. Decision as to what constitutes a major study will lie with sponsoring Staff and command agencies. The basic principle to be applied is that special studies, as defined in Section 3, which are of importance to Headquarters, Department of the Army should be the subject of bibliographic data input to the study information center when they are initiated, and a copy should be furnished upon completion of the study. By so doing, the study will be available as needed to the Army Staff, and will be included in Army-wide bibliographic catalogs for potential use to other commands.

5. Since the basic value of the study information system is dependent upon the information which is provided the system, some attention to the details of this aspect is appropriate, although detailed instructions would be prepared by The Adjutant General, in conjunction with the Director of Special Studies, after approval of the concept. The system would be initiated by the assembly of bibliographic data on studies in progress and on completed studies which are considered

by Staff and command agencies to be of current or future significance. Subsequently, data would be submitted on new major studies as they are initiated. The desirable data to be collected includes title, study agency, sponsoring agency, study category according to a standard list of categories, starting date, completion date, abstract, time frame being studied, purpose of the study, and a series of descriptor terms selected from a prepared list of terms to which the library retrieval system is keyed. It is visualized that this data would be prepared on a standard card form for filing and for machine storage ready for machine printout in bibliographic form as required.

6. In addition to initial bibliographic data on each study, upon completion a copy of the study itself would be forwarded to the study information center. As an aid to library use, each study should contain a title page, table of contents, an abstract of 100 words or less (also included in bibliographic data), a summary which is preferably in the standard format of a staff study and a list of references. It is visualized that the ASDIRS would be capable of quick search of files, using a visual sorting device based upon descriptor terms which are keyed to the contents of each study, quick reproduction of study summaries on request, and loan of the complete study if needed. Reproduction of whole studies is not considered to be an economical or necessary initial capability. If additional copies were needed, they would have to be obtained from the study agency or sponsor. Initially, publication of an abstract bibliography quarterly is considered adequate, although a more frequent informal dissemination would be possible by telephone or personal visit. A detailed expansion on the structure, scope and method of operation of the recommended Army Study Documentation and Retrieval System is contained in Annex C to this report.

SUB-SECTION 9c

A COMMON BASE AND "MEASURING STICKS"

1. This sub-section comprises an expansion of the earlier, brief descriptions of the concept and proposed content of the "Forecast of Conflict Environment" and the "Rainbow Scenarios" which are proposed to provide a common base for major Army studies and to permit a wider comparability in the evaluation and integration of study findings.

2. The "Forecast of Conflict Environment". The annual revision of the Basic Army Strategic Estimate (BASE) is a key action with regard to the Army hierarchy of plans and programs. Inputs to the revision include long-range projections of the US national security policies, national military policies, the world political scene, projections of potential technological improvements and a varied assortment of "intelligence" inputs. From these and other inputs the BASE, in effect, defines the long-range "threat" and gives broad guidance as to the organization and equipping of the Army to meet the threat.

3. While the BASE includes a well thought through and comprehensive, although generalized, estimate of the long-range future, it is not a sufficiently detailed guide and basis on which to erect a system of uniformly applicable background inputs to major strategic and policy studies. Its utility could be enhanced if it were to provide a common basis for long-range studies by having appended to it a document entitled the "Forecast of Conflict Environment". This appendix to the BASE could be used in a number of ways in regard to more specific plans and actions deriving from the BASE. In particular, this appendix would be used to provide a common background for the Army study system.

4. The "Forecast of Conflict Environment" would include:

a. Chapters dealing with continental areas and additional chapters covering intercontinental power groupings.

b. Each area chapter will be broken down into sub-divisions covering individual large countries or natural groupings of smaller countries.

c. Each area chapter and sub-division should provide basic information on:

(1) Physical, geographical and meteorological characteristics, demographical trends and other pertinent "vital statistics".

(2) A treatment of the developing political trends, recognizing that the difficulty of projecting such matters into the future may require the expression of alternative projections.

(3) Projections of economic trends and alternative trends.

(4) Projections of total and specific power factors, with specific emphasis on the military factors, again using alternative projections if necessary.

(5) Evaluated projections of likely scientific and technological process in the area or country concerned, with particular reference to their application to military weaponry and materiel.

(6) The dynamics of power in each area involved in the growth or diminution of existing power centers and the possibilities of the rise of new power centers.

4. The inherent difficulties in attempting meaningful projections of political, economic, sociological, psychological and technological trends makes the effort increasingly less useful the further into the future such projections are attempted. Therefore, while the Army's overall technological and strategic forecasts normally attempt to reach out as much as 20 years in the future, it should be accepted that the "Forecast of Conflict Environment" will, of necessity, be a shorter-range projection -- out to perhaps only 10 years at best.

5. The first "Forecast of Conflict Environment" should be produced by 1 January 1965, if at all feasible, in order that it can provide direct inputs to the 1965 revision of the BASE and be published as an annex thereto for the support of the 1965 Army study program. Once produced, it should be revised annually on a time table enabling it to provide direct inputs to the next revision of the BASE and to be appended to it.

6. The "Forecast of Conflict Environment" would support the Army's study program by providing focused intelligence forecasts in a condensed and useable form to be used where applicable as a common basis for background input to studies. When analyzed in conjunction with our technological and strategic forecasts, it would provide a far better basis from which to develop requirements for basic Army studies, avoid gaps in the program and determine the proper emphasis to be applied to each portion of the program. It might well be found also to have application well beyond its support of the study program.

7. While many factors other than intelligence must be synthesized in producing the "Forecast of Conflict Environment", it is believed that the primary responsibility for its production should be assigned to the Assistant Chief of Staff for Intelligence.

8. The "Rainbow Scenarios". This is the concept of the use of a battery of hypothesized situation scenarios, set some 6 to 8 years in the future, as an aid in integrating the Army study system, and the results of the specific studies therein. These scenarios are given the title of the "Rainbow Scenarios" to hark back to the "Rainbow Plans" developed by the Army General Staff just prior to World War II.

9. The "Rainbow Scenarios" would be used primarily to provide a common background basis for the conduct of all pertinent types of Army studies. Currently our study system has no uniformity in its procedures for evaluating and comparing effectiveness across the range of potential levels of conflict in the future. We have only a rule of thumb to determine the relative weighting in importance of the different sorts of potential conflict -- for which the Army of the future should be prepared to engage in -- the 17/22, 3/22 and 2/22 formula which, in itself, is not universally applied. We have no common methodological concept for developing conclusions as to what percentage of our equipment or what percentage of our organizations should be "general purpose" and what should be "special purpose". Aside from current difficulties in comparing requirements derived from one study against those derived from other studies, we lack a formal system for continuously reviewing, in perspective and across a wide background, a host of lesser questions such as that of whether or not all, or what part, of our equipment should be air transportable.

We do not have a "measuring stick" method to review the question of to what degree we should continue to require all general purpose wheeled vehicles to be capable of water proofing, to give them the capability to land off amphibious craft, or to wade deep streams. The commonly applicable "Rainbow Scenarios" can provide considerable help in the better resolution of these difficulties.

10. In long-range planning and development the Army must contend with considerable lead time problems in research and development, and with the formulation of doctrine, organization and training. We are continuously confronted with the problem that if, and only if, we remain fully capable of fighting a major war will major wars be the least likely type we shall have to fight. This means we must meet the requirements to be optimally effective, usually with allies, for both major war and all of the lesser types of conflict. The resolution of the paradox, insofar as it applies to studies affecting our planning and programming, can be helped by the intelligent and skillful use of a battery of situation scenarios which have been constructed to cover selected samples of all major bands in the spectrum of conflict and by assigning the different scenarios appropriate weights when they are used in the testing, comparing and synthesis of study results.

11. Each of the scenarios should cover the many varied factors which affect real contingency planning, such as climate and terrain, levels of development of the area, quantitative and qualitative information on the local populations, political and economic factors, friendly and hostile political groupings, US political objectives to include political constraints, allied objectives, allied command relationships, enemy objectives and constraints, and quantitative and qualitative military force potential both friendly and enemy. The scenarios should not attempt to set forth operational plans or developments. They are merely to set forth the total background and environment, physical, political and military, in which a hypothetical but realistic situation develops, 6 or 8 years in the future which calls for US military intervention to attain specific US objectives. When they are being used in relation to any specific study, the military operations involved can be constructed to the extent necessary in the course of the study. They will be simply a set of situations for common use, in toto or selectively, as required by the particular study.

12. The scenarios, even though hypothetical, should be classified because of their potential political sensitivity and held for US use only. Consequently a specific list is not included in this report. However, generally speaking they should include two or three in Europe, one or two in Africa, two or three in Central and South America and two or three in Asia to include the Middle East. The initial battery of scenarios could be fewer than the eventual full battery, but at least one in each of Europe, Africa, South America and Asia should be completed by about 1 January 1965, with the others being developed in succeeding years. It seems appropriate that the Assistant Chief of Staff for Intelligence be given the primary responsibility for their production.

SUB-SECTION 9d

CLARIFIED PRINCIPLES AND PROCEDURES FOR THE INITIATION, CONDUCT AND USE OF STUDIES

1. An important contribution to a smoother and more effective Army study system can be made by establishing and disseminating clear and defined principles and procedures for the initiation, conduct and use of studies. Such principles and procedures should be applicable to all major Army special studies, whether they be self-initiated within a sponsoring agency or directed from above to be conducted under the supervision of the sponsoring agency.

2. A description and rationale of recommended operating principles and procedures are set forth below. In addition to these procedures, the current practice should be continued of designating a steering group to provide overall monitoring and review of a study as it progresses, and a working group of staff officers as "points of contact" to provide for direct inputs to the study agency.

3. Origination of a study. Effective responsiveness to a study requirement is in large measure determined by the thoroughness with which the preliminary analysis of the requirement is made. Deliberate, thoughtful and thorough analysis of the problem, bibliographical research and staff coordination at this early stage can yield substantial returns in terms of problem definition, determination of the best type of study method and organization, and the emphasis and priorities which will make best use of Army study resources which are likely always to be limited. Specific steps in this procedure follow:

a. Initial analysis of the problem. Full and careful analysis of the problem area to be studied, the objectives of the study, its parameters, scope and basic assumptions, and the inter-relationships, time frame and "environment" within which it should be conducted, are an essential first step. After this initial analysis a carefully worded, tentative "terms of reference" should be drafted to include the foregoing elements and a clear "statement of the problem". No complex problem area, however, can be exactly defined in advance of the conduct of the study itself, and in consequence, recognition must be taken of the fact that the problem will very possibly be more

precisely defined during the course of the study. Nevertheless, the final responsiveness and utility of the study will be directly commensurate to the amount of time spent analysing and defining the problem itself prior to assigning it for study.

b. Initial bibliographical and background research. A concurrent but equally important step, and one which is too often slighted because of the pressure of events, is the conduct of the necessary background research to determine what previous studies and other material exist which can be used in the new study. The development of study information reference files by the Study Coordinators to augment the formal catalogs and the information system to be set up under the Study Documentation and Information Retrieval System described in Annex C will make it possible to do this task more thoroughly and with less expenditure of time and effort.

c. Tentative Determination of type and technique of study to be used. The analysis and research steps provide important information which leads to the next step -- the calculated determination as to the size, type and technique of study effort needed to meet the requirements of the new study problem. From this should come a recommendation as to the study agency or group, either in-house or contract, which should be assigned the task. This step may lead anywhere from a recommendation to fulfill the new study requirement by a "staff study" which synthesizes and updates the conclusions reached in several previous studies, through various more complicated techniques up to the assembly of a large ad hoc study group to study the problem afresh.

d. Coordination of the problem. During the process of preliminary analysis of a new study requirement, it should be coordinated with other staff agencies and commands with potential interest. The system of Study Coordinators to be established throughout the Staff and commands should facilitate this coordination. The objective of the coordination is to capitalize on the opportunity to modify and refine the statement of the problem so as to include, so far as feasible, additional facets of the problem where inclusion would benefit other agencies, and to insure that other agencies are aware of the impending study and will consider it in the conduct of their own study activities and programs.

e. Consultation with the originator of the requirement.

In the case of studies directed by the Chief of Staff, Secretary of the Army or Secretary of Defense, it is essential that, during the analysis, research and staffing of the initial study requirement by the Army Staff agency which has been given responsibility for sponsoring the study, the sponsoring agency establish direct liaison with the individual or agency which originated the requirement. This will be arranged through the Director of Special Studies, OCS. At this preliminary stage, the purpose of consultation with the originator is to review with him the tentative terms of reference, assumptions and problem definition, the results of the background research and the preliminary decision as to type and form of study in order to insure the proposed approach will be responsive to the request in terms of validity, scope and timeliness. This direct liaison will be continued throughout the conduct of the study.

f. Final determination on type of study. After the above steps have been completed and the final proposed terms of reference have been drafted, the Staff agency chief should determine whether the study required will be performed as a staff study or a special study. If it is to be a staff study, he will proceed to the conduct of the study. If a special study is indicated, the proposed terms of reference will be referred to the Vice Chief of Staff for approval. This will normally be done by referral to the Army Study Advisory Committee, but in cases where only non-competitive resources are involved it may be processed as a regular staff action. On those referred to the ASAC, the Committee (of principals or using the alternate members, as required) will integrate the new study into the Master Study Program, review priorities concerned, consider the means for funding the study and then make any appropriate additional recommendations to the Vice Chief of Staff. Upon his approval the study will be commenced.

4. Conduct of studies. Economical use of study resources should be facilitated by the application of the origination procedures described above. Continued effectiveness in the use of these resources during the conduct of a study requires a continuing close liaison with the originator of the study requirement, appropriate use of the common base and measuring sticks which will be available in the "Forecast of Conflict Environment" and the "Rainbow Scenarios", and specific effort to make full use of applicable science and technology to the problem being studied.

a. Liaison with the originator. The consultation between the study agency and the originator of the study requirement which is essential in defining the problem is also essential as a basis for a continuing contact as the study progresses. As more facts are discovered and analysis is accomplished, the problem itself may require redefinition or modification. In addition, as a study progresses, events may occur which affect the definition of the problem, the originator may find preliminary findings useful and may wish to modify the objectives of the study as he evaluates those preliminary findings. Contact between the study agency and the originator should therefore, be on as informal and personal a basis as possible. In some cases, however, formal interim reporting will be required.

b. Use of a common base and "measuring sticks". The use of the "Forecast of Conflict Environment" and the "Rainbow Scenarios" as a mechanism for improving the consistency and mutual support among most Army studies has been elaborated in Section 9b. While the applicability of these documents will vary among study categories, standard study procedures should stress their use whenever possible. In the conduct of studies where these documents are not useful, the basic need for optimum consistency among studies should nevertheless be kept in mind.

c. Introduction of Scientific and Technological Information. The burgeoning scientific and technological revolution requires that particular attention be paid to these factors in the conduct of Army studies. Study agencies should take explicit action to apply scientific and technical developments to the problem being studied. Research in the DOD Scientific and Technical Information System (STINFO) and with appropriate research and development agencies should be prescribed in procedures established for the conduct of studies.

d. Study format. Effective presentation of the results of the diverse studies found in the Army and accomplished by a variety of study groups could be unnecessarily inhibited by rigid rules of format. However, to facilitate ready retrieval from files, an abstract of each study, and the bibliographic data required for the Army Studies Documentation and Retrieval System is necessary. Additionally, a complete summary which is preferably in the familiar and useful staff study format increases the ready availability of study results

to Staff agencies who must develop staff recommendations, as well as to others researching previous study efforts.

5. Use of studies. Current differences in action taken upon the completion of studies often lead to lengthy staffing and difficulty in relating conclusions to the real problems of the reviewing agencies. This is particularly true if they are studies which lead to fairly broad conclusions rather than specific recommended actions. Therefore, simple, common procedures are desirable which will insure follow-up in the form of substantive staff review, development of recommendations to implement the findings of the study, dissemination of the study findings and follow-up on any approved recommendations deriving from the study.

a. Substantive review. Procedures are necessary within sponsoring agencies to insure substantive staff review and evaluation of the study findings or conclusions to insure their validity in the real world of planning, programming and budgeting and to lead to the development of staff recommendations which appropriately exploit the findings of the study.

b. Staff recommendations. Because studies are normally developed within parameters which cannot include all of the dynamic factors affecting decision-making, a highly important step in using study effort is the translation by the sponsoring Staff agency of a study's findings and conclusions into Staff recommendations. Some studies will make only a generalized contribution to policy formulation while other studies can lead to specific and detailed actions such as Program Change Proposals, organizational changes and revised statements of the operational doctrine. In any event the sponsoring Staff agency should formally decide on the interagency use of the study and make specific recommendations on intra-agency use.

c. Follow-up. When actions deriving from recommendations made on a study's findings and conclusions are approved, it is important that these actions be followed-up in a timely way. Included in follow-up is appropriate dissemination of the study.

ANNEX A

to THE ARMY STUDY SYSTEM

Directive



C O P Y

CSM 63-105

Effective until 15 August 1964 unless sooner rescinded or superseded.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF STAFF
Washington, D. C. 20310

CS 321 DSS (15 Aug 63)

15 August 1963

MEMORANDUM FOR: DEPUTY CHIEFS OF STAFF
COMPTROLLER OF THE ARMY
CHIEF OF RESEARCH AND DEVELOPMENT
CHIEF, OFFICE OF RESERVE COMPONENTS
ASSISTANT CHIEF OF STAFF FOR FORCE DEVELOPMENT
ASSISTANT CHIEF OF STAFF FOR INTELLIGENCE
CHIEF OF INFORMATION

SUBJECT: Terms of Reference for Director of Special Studies,
Office of the Chief of Staff, U. S. Army

1. Establishment. The position of Director of Special Studies is established in the Office, Chief of Staff, effective on or about 15 September 1963.

2. Mission. The Director of Special Studies will personally monitor, review and make appropriate recommendations to the Vice Chief of Staff, the Chief of Staff and the Secretary of the Army concerning such important studies affecting the readiness and capabilities of the Army as may be assigned to him for action.

3. Organization. The Director of Special Studies will be a senior Army general officer designated by the Chief of Staff. He will be assisted by one lieutenant colonel (Executive Officer), and one civilian secretary. He will be provided administrative support, to include office space, by the Secretary of the General Staff.

4. Relationships. The Director of Special Studies will be under the direct supervision of the Vice Chief of Staff, and will be responsive to requirements of the Secretary of the Army, Chief of Staff and Vice Chief of Staff. He will have no directive authority over elements of the Army staff or subordinate commands. He will, however, be expected to work closely with all staff elements and appropriate subordinate commands within his terms of reference.

C O P Y

C O P Y

5. Procedures. The normal modus operandi on special studies assigned to the Director of Special Studies will be as follows:

a.. Each major study project so assigned will be made the subject of a separate Chief of Staff memorandum (CSM) defining the project, the agencies and commands concerned, and any special instructions which may be applicable.

b. For such studies, the Director of Special Studies will be designated as chairman of a steering group of general officers representing selected Army staff agencies and subordinate commands with major interest in the subject of the study. The steering group will meet as required, or call of the chairman, to provide guidance for, and to monitor development and review of the study.

c. The Army General Staff agency with primary interest in the subject covered by the study will be directed to convene and provide the chairman of an appropriate working group for actual conduct of the study, to provide administrative and other required support for the working group, to provide support for the steering group as required, to staff the completed study, and to submit the resulting product to the Office of the Chief of Staff. In selected cases, responsibility for actual conduct of the study may be assigned to a major subordinate command; in that event, responsibilities of the Army staff agency with primary interest will be modified to encompass coordination with and support to the subordinate command.

d. Upon receipt of completed studies in the Office of the Chief of Staff, such studies will be referred by the Vice Chief of Staff to the Director of Special Studies for review, together with appropriate instructions in each case.

e. The Director of Special Studies will submit appropriate written status reports concerning the progress in the development of each study, as well as problems encountered, to the Secretary of the General Staff, who will be responsible for informing the Vice Chief of Staff, the Chief of Staff, the Secretary of the Army, and Army staff agencies and commands, as appropriate.

s/ Barksdale Hamlett
t/ BARKSDALE HAMLETT
General, United States Army
Vice Chief of Staff

cc: Secretary of the Army
CLL

C O P Y

Effective until 10 September 1964 unless sooner rescinded or superseded

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF STAFF
Washington, D. C. 20310

Col Freda/amf/76261

CS 321 DSS (10 Sep 63)

10 September 1963

MEMORANDUM FOR: DIRECTOR OF SPECIAL STUDIES

SUBJECT: Army Studies

1. The Army has produced and is producing many studies of varying scope on a wide range of subjects. Some of these studies have been produced by the field commands and some within the Army staff, either self-generated or at the direction of the Army Secretariat or the Department of Defense. In fact, one of the major problems facing us today is the lack of knowledge of what studies have been completed and where they can be found for ready reference by all agencies of the Army who need to refer to them. Because of the absence of codification of existing studies, new studies are sometimes initiated on subjects which are already covered in existing studies.

2. Accordingly, it is desired that you undertake, as a matter of priority, a study to examine the current arrangements for in-house and contractual Army studies, with a view toward developing new policies and procedures which will insure adequate control and use of the over-all Army study effort. Your study will be the basis for the establishment of a system for: evaluating requirements for new studies and recommendation as to the command or staff agency which should initiate them; the substantive review of studies by qualified agencies; reporting on, and disseminating of, all studies; effective integration of this effort with the plans-programs-budget cycle; and the establishment of appropriate study priorities. The system should neither unduly centralize authority at the Department of the Army nor infringe upon commander's responsibilities and authority.

3. The Director of Coordination and Analysis will provide you assistance in pursuing this study, and in staffing it after it has been completed.

C O P Y

4. The normal modus operandi for special studies, as stated in paragraph 5 of the CS Memorandum of 15 August 1963 on your terms of reference, does not apply with respect to the study directed above.

s/ Barksdale Hamlett
t/ BARKSDALE HAMLETT
General, United States Army
Vice Chief of Staff

Copies furnished:

Deputy Chief of Staff
Comptroller of the Army
Chief of Research and Development
Chief, Office of Reserve Components
Assistant Chief of Staff for Force Development
Assistant Chief of Staff for Intelligence
Director of Army Programs
Director of Coordination and Analysis

C O P Y

ANNEX B



**to
THE ARMY
STUDY SYSTEM
Army Study Agencies
and Facilities**

ANNEX B

ARMY STUDY AGENCIES AND FACILITIES

HEADQUARTERS, DEPARTMENT OF THE ARMY

Office, Chief of Staff

Capability

Directorate of Coordination and
Analysis

Policy and Strategy Division Broad scope politico-
military studies

Systems Analysis Division Cost-effectiveness studies
and systems analyses

ODCSOPS

Strategy & Tactics Analysis Major war gaming and
Group, Bethesda, Maryland operational analysis in
support of Army planning

ODCSPER

Advanced Studies Group Personnel management and
concept studies

OCE

Engineer Strategic Studies Strategic planning studies,
Group, Army Map Service engineer planning studies,
vulnerability analyses

ASA

Operations Research Division Special studies of ASA
Arlington Hall functions

OCRD

Army Personnel Research Office Studies and research in mili-
Washington, D.C. tary personnel utilization
and measurement

Research Analysis Corporation Major capability for
McLean, Virginia operations research, war
gaming and special studies

Human Resources Research Office
The George Washington University
Washington, D.C.

Operations research in
training methods & human
motivation

Special Operations Research
Office, The American University
Washington, D.C.

Studies and operations re-
search in the military applica-
tions of social sciences in
cold and unconventional war-
fare

COA

Office, Director of Organization
and Management

Studies of management
practices & administrative
organization

ARMY MATERIEL COMMAND

Headquarters, AMC

Systems Research Division,
Data Systems Office,
Hq, AMC

Operations research in
logistics management

Concept Analysis Branch
Technical Service Division
R&D Directorate
Hq, AMC

R&D technical planning
studies and comparative
analyses

Foreign Science & Technology
Center, Washington, D.C.

Studies synthesizing for-
eign technical and scientific
analyses

AMC Board
Aberdeen Proving Ground, Md.

Basic long-range conceptual
study agency for Hq, AMC.

Weapons System Laboratory
Ballistic Research Laboratories
Aberdeen Proving Ground, Md.

Operations research in
weapons system evaluation

Dept of Management Planning
Management Engineer Training
Agency, Rock Island, Illinois.

Management techniques and
systems studies

Coordination Group
Major Items Data Agency
Chambersburg, Pennsylvania

Materiel readiness studies
on specific major items of
Army equipment and on unit
equipment status

Logistical Research & Doctrine
Department, Army Logistic
Management Center, Fort Lee, Va.

Logistic doctrinal studies
and broad logistic concepts

Missile Command

Weapons Analysis & Requirements
Branch, Future Missile Systems
Division, R&D Directorate
Redstone Arsenal, Alabama

Simulation and parametric
analysis of air defense and
surface-to-surface missile

Electronics Command

Electronics Logistic Research
Office, Philadelphia, Pa.

Studies on supply and main-
tenance support of electronic
materiel

Supply & Maintenance Command

Special Projects Office
Army Maintenance Board
Fort Knox, Kentucky

Special equipment
maintenance studies

Weapons Command

Weapons Operations Research
Division, Hq, USA Weapons
Command, Rock Island, Ill.

Studies and operational
analysis of weapons, pro-
duction, quality, control
& facilities

Munitions Command

Office of the Chief, Supply
& Maintenance Group, Frankford
Arsenal, Pennsylvania

Operations analysis of
supply and maintenance
activities

Objectives Analysis Office,
Math Branch Physics Laboratory
Institute for Research
Frankford Arsenal, Pa.

Studies of R&D design,
and weapon systems analysis

Operations Research Group
Edgewood Arsenal, Maryland

Operations research in
CBR field

Mobility Command

Materiel Management Studies
Division Management Office
USA Aviation & Surface Command
St. Lewis, Missouri

Operations research on
inventory and managerial
problems

Aeronautical Systems Advanced
Design Group, Ft Eustis, Va.

Aeronautical engineering
studies and concept development

USA COMBAT DEVELOPMENT COMMAND

Hq, Combat Development Command

Combat Operations Research Group

Operations research and
limited war gaming support
to Hq, CDC

Institute of Advanced Studies
Carlisle Barracks, Pa.

Long-range strategic and
politico-military studies

Combined Arms Group

Combined Arms Agency
Ft Leavenworth, Kansas

Combat development studies
in areas of interest
associated with agency
name.

Air Defense Agency
Ft Bliss, Texas

"

Armor Agency
Ft Knox, Kentucky

"

Artillery Agency
Ft Sill, Oklahoma

"

Aviation Agency
Ft Rucker, Alabama

"

Chemical-Biological-Radiological
Agency, Ft McClellan, Alabama

"

Communications-Electronics Agency
Ft Huachuca, Arizona

"

Engineer Agency
Ft Belvoir, Va.

"

Combined Arms Group (Cont'd)

Infantry Agency
Ft Benning, Georgia

Combat development studies
in areas of interest associated with agency name

Intelligence Agency
Ft Holabird, Maryland

"

Combat Service Support Group

Adjutant General Agency
Ft Benjamin Harrison, Ind

"

Chaplain Agency
Ft Lee, Virginia

"

Civil Affairs Agency
Ft Gordon, Georgia

"

Medical Service Agency
Ft Sam Houston, Texas

"

Military Police Agency
Ft Gordon, Georgia

"

Quartermaster Agency
Ft Lee, Virginia

"

Ordnance Agency
Aberdeen Proving Ground, Md.

"

Transportation Agency
Ft Eustis, Virginia

"

Special Warfare Group

Special Warfare Agency
Ft Bragg, N.C.

"

Command Control Information Systems Group
Fort Belvoir, Virginia

Nuclear Group

Fort Bliss, Texas

Studies on nuclear weapons
characteristics, effects,
safety and protection